Established 1914

June 1932

CHEMICAL MARKETS

VOLUME XXX NUMBER 6

CONTENTS

CHEMICAL MARKETS *is indexed regularly in the* INDUSTRIAL ARTS INDEX

CHEMICAL MARKETS, Inc., Publishers

Publication Office, 28 Renne Ave., Pittsfield, Mass. Editorial and General Office, 25 Spruce St., New York City

WILLIAMS HAYNES, PRESIDENT; H. H. ADAMS, VICE-PRESIDENT; WILLIAM F. GEORGE, SECRETARY-TREASURER

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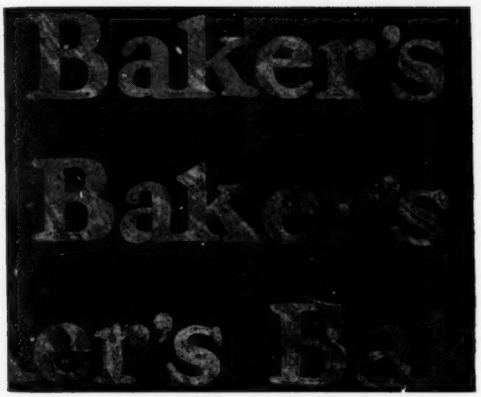

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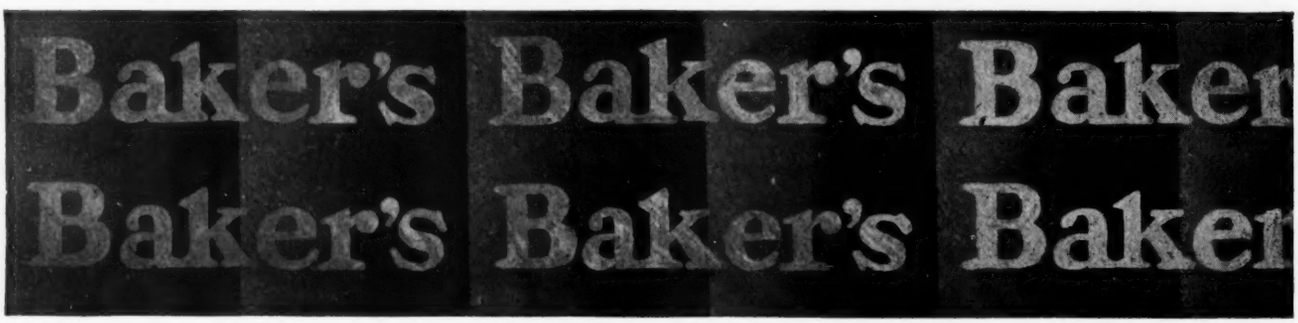

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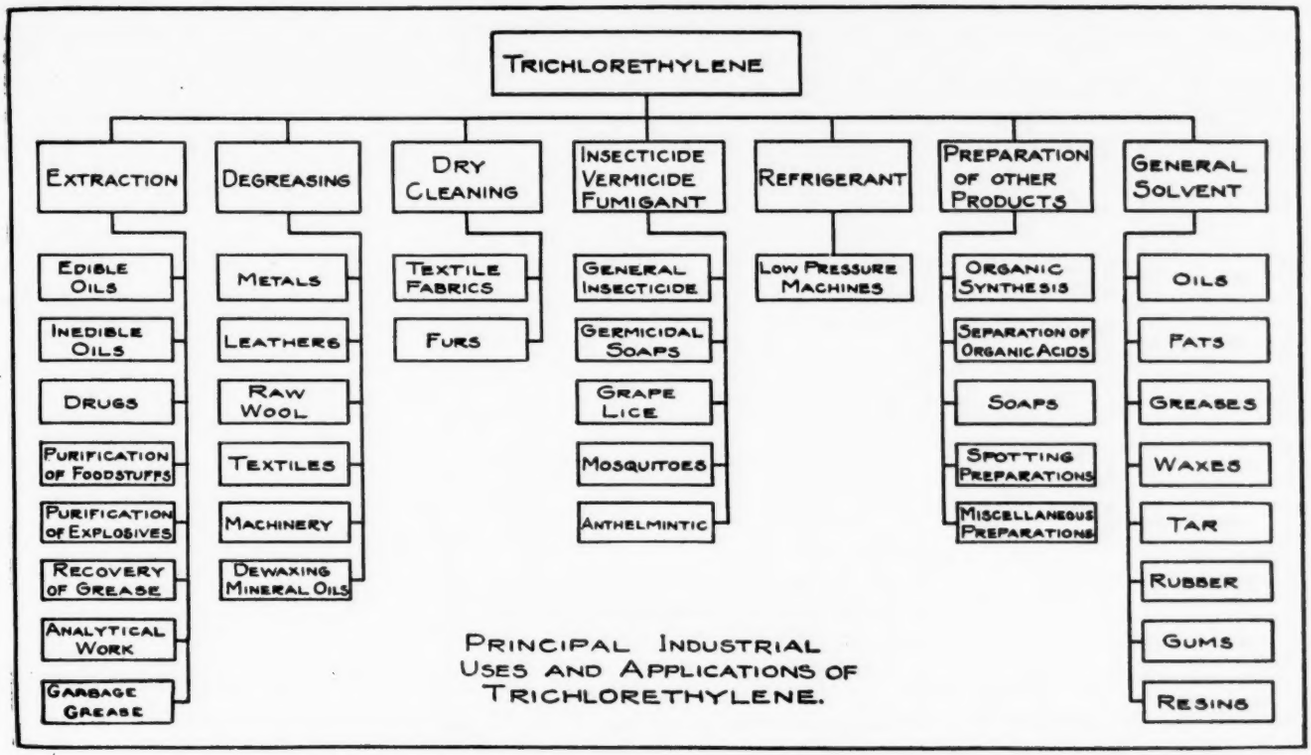

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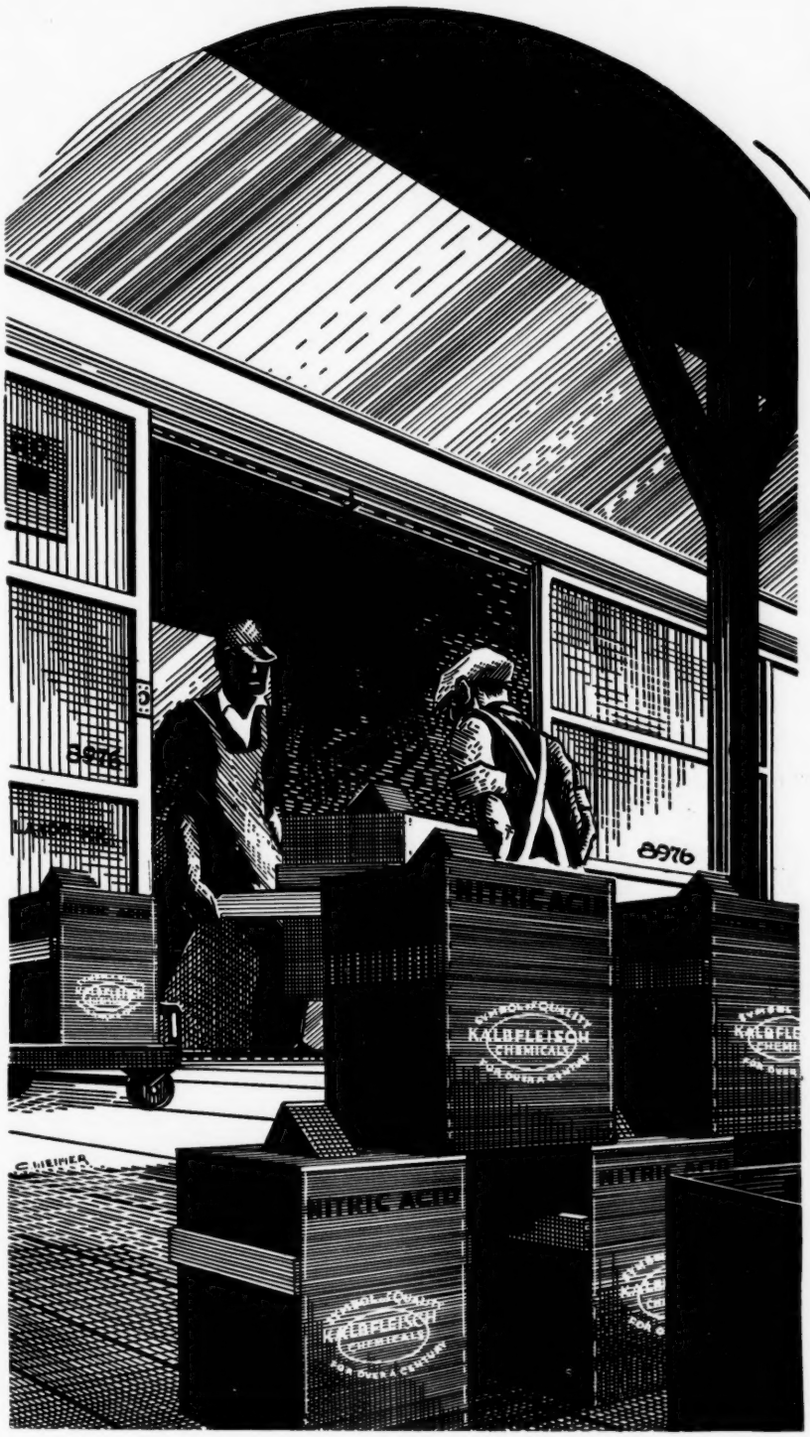

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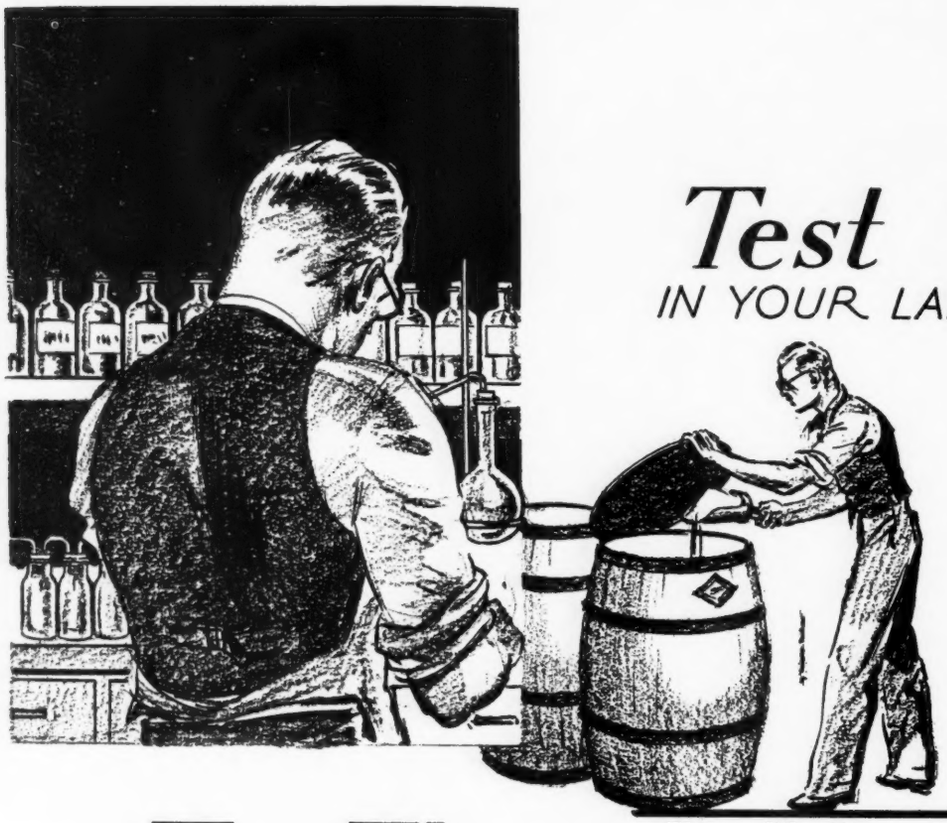

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CHEMICAL MARKETS

VOL. XXX JUNE, 1932 NO. 6.

"If this be Treason"—

BUSINESS has at last learned to speak the language that is understood in Washington. We hope that the voice of the chemical industry will make itself plainly heard and clearly understood.

MONSANTO-Merrimac have shown a way to make the influence of industry felt. When Mr. Edgar Queeny in Missouri and Mr. Belknap in Massachusetts put into the hands of their employees each week a resume of how their representatives have voted on bills which affect the business of the company they are using a pet method of the drys and the veterans, two groups who have amply demonstrated their political power. We commend to every company in the country this simple and very effective way of impressing Congress with facts which have apparently been quite forgotten: that business has developed our resources and increased the national wealth; that business alone can restore prosperity; that business is the only agency big enough to solve our unemployment problems; that business pays the taxes; that business in the present economic crisis deserves every sound support it can receive, for business is literally the backbone of the country.

WE DO not share the timid views held by some of the officers of our industrial associations that to inform the employees of a company on just what certain laws mean to the prosperity of that corporation is apt to bring charges of coercion. In such times it seems to us, on the contrary, a very proper and certainly an honest bit of public education. It is assuredly needed, and we wish every industry in the country might adopt the simple plan (which is described in detail in this issue) and with brutal frankness lay before their office and factory staffs the plain meaning to them as workers for the corporation of every piece of legislation upon which their representatives vote. This is but grasping the same whip which two of the most powerful and best organized lobbies in Washington have repeatedly snapped over the shoulders of Congress. It is high time we had a little coercion of this sort in the interests of some economically sound action.

IT IS most interesting to note the immediate response that both companies have had to this plan. One Massachusetts representative has gone so far as to offer to compile a complete record of his "business votes." Any business man who has been knocking at the doors of Congress can appreciate the meaning of this prompt reaction. It is inconceivable that all business interests would always agree; but if this plan were widely adopted we can be certain at least that a balanced budget and a sane revision of our tax laws would be forthcoming and that there would be no pork barrel relief and no more largesse to Legionnaires. Those four points would go a long way towards restoring our sadly shattered confidence.

Federal Finances Figures are juggled so quickly in Washington these days that it is almost impossible even for the business man reasonably familiar with budgets and balance sheets to have anything like a clear and definite picture of our federal finances. The average citizen is completely at sea. He appreciates that Government expenses are greater than Government income; but the whys and wherefores of the deficit are as intelligible as a Mayan inscription. A few simple figures therefore may be useful.

The estimated budget is at present four and one-half billions; the estimated receipts are two and one-quarter billions, or just about half the projected expenses. Of these expenses, one and one-quarter millions—or more exactly 28.5 per cent of all costs—are fixed expenses represented by interest on the public debt (13.5%), debt retirement (9.2%), trust funds (5.8%).

Of the operating expenses of the Government, the following is a summary:

Federal Appropriation Bills for 1933

	1933 Appropriation	*1933 Budget Estimate*	*Passed House*	*Passed Senate*
AGRICULTURE	$235,664,694	$186,243,405	$175,408,814	$177,124,768
INTERIOR	69,342,606	56,705,352	50,446,432	45,398,672
POST OFFICE and TREASURY	1,104,586,890	1,082,575,905	1,059,778,163	.....
STATE JUSTICE COMMERCE LABOR	139,010,704	129,788,136	124,215,992	.....
INDEPENDENT OFFICES	1,306,196,777	1,041,395,041	985,931,431	.....
TOTAL	$2,854,801,671	2,496,706,839	2,395,780,832	

The Army and Navy appropriations are not settled as this is written, but they called originally for $721,000,000.

No rare financial skill is needed to comprehend that with marked curtailment of income and revenue taxes, and of custom duties, coupled with the necessity of relief appropriations, the situation is grave. Every dollar saved in Government expense is a dollar less to be raised by taxation. Upon these two facts may be judged the acts of every member of both houses of Congress.

More Cost Problems For many years the chemical industries have wrestled with production costs without discovering any agreed and workable accounting formula for joint products and by-products. Accordingly, no three makers may feel even reasonably confident that their costs of a given chemical are reckoned upon a comparable basis. Differences in yields between different processes; variations in the same process, due to slight changes in apparatus, or temperature, or time, or catalyst; individual degress of quality of raw material, all introduce uncertainties which complicate the already complex problem, and anything like uniform costing is still an ideal far beyond our practical accounting practice.

Now a second cost problem is looming up. It is one that promises to be quite as stubborn when we attempt to reduce it to fair average results useful for comparison purposes.

The costs of distribution are being studied more and more scrupulously. The more they are scrutinized, the more complicated they become, yet if they are to be reduced intelligently, it is necessary that they be analyzed fairly. Again, the problem resolves itself into one of just and comparable allocation.

Actual selling expenses are only a part of the costs of distribution, which are, of course, the sum total of every expense incurred from the time a chemical is produced in the plant until it is delivered to the ultimate consumer and paid for by him. This involves a number of distinct steps, uses definite materials, and requires certain well defined services which are all briefly reviewed in an article in this number. For two reasons, clear recognition of these various functions is important in any effort to cut marketing costs. First, the selling function is dangerously apt to monopolize our attention. Second, it is easy to think that two or more of these necessary functions may be economically combined. As a matter of fact, the actual sale of such goods as chemicals often costs but a small portion of the total distribution expense; and while the chemical marketing process may be simplified, each one of its essential elements must be paid for.

Much less accounting help can be had in determining distribution costs than has been available in recording and analyzing production costs. This is a newer problem and the accounting technique is less perfect; but it is being intensively studied by many experts and it does not have the peculiar intricacies of chemical manufacturing to make it unique and complicated. Doubtless, we shall shortly know a great deal more about chemical marketing costs.

Who Plans What? Business has bogged down into a world-wide quagmire because its foundations are split between two antagonistic, irreconcilable systems: free competition and controlled production.

Summed up in a sentence that is the kernel of the thought of the world's most competent economic brains. This is getting down very close to the real fundamentals. Over-production and the monetary crisis are seen from this viewpoint to be only the primary results of the initiating cause; while the decline in prices, the restriction of credit, and unemployment—with which most of our remedial measures have been concerned—appear as only secondary results and in truth rather remote from the center of the problem.

From this perspective it is plain that the use of the machine has banished for the Western World the age old economic fear of shortages and famines. It has brought us new problems which obviously can not be solved by a scheme of business which relied upon the action of free competition to hold the balance between supply and demand. As a matter of plain fact, there has probably never existed any such practical economic force as free competition, and even in Russia and Italy, we cannot today find a perfectly controlled production. Out of these speculations have come the proposals for a planned economy, and as the depression runs its course, it becomes increasingly evident that some sort of control over the enormous output of all sorts of goods which is more efficient than anything we know, is going to be necessary to prevent a series of jams, such as the one in which we are now caught fast. It is not very difficult to set up such a programme and to devise on paper, the needed control. Specifically, if half of our chemical plant capacity worked twenty-four hours a day, it would supply our chemical needs. The question is, which half? And who shall answer this question, and how shall that authority be enforced ?

Quotation Marks

For most of us the depression has been a grim teacher. Enterprisers are learning that the essence of trade is profit; executives, that direct action is better than remote control; accountants, that a few simple figures give us most of the answers; and, statisticians, that foresight comes from insight, not hindsight.—*Joseph H. Barber, The Management Review.*

A good part of the criticism appears exceedingly ill-informed, especially that directed against the efficient Guggenheim process which has been made available to the nitrate industry in place of the old Shanks process. The Chilean product would have passed out of the nitrogen picture had not the Guggenheim patents been introduced in time to cut costs and increase extraction efficiency.—*N. Y. Journal of Commerce.*

While for the present the most important field, commercially, for hydrogenation is that of oils, edible and petroleum, and coal, the hydrogenation of other organic substances (such as acetaldehyde, nitrobenzene, phenol, pyridine) is being practiced to an increasing extent on a technical scale, and will undoubtedly be extended in the future. A noted chemist has prophesied that by continually adding hydrogen to natural water gas under pressure, synthetic fats, proteins and dyestuffs can be built up, and that it is perfectly logical to suggest that an artificial silk, more closely resembling the natural product than does rayon, will yet be made by this process.—*The Industrial Bulletin, Arthur D. Little, Inc.*

There is but one conclusion to draw and that is that new developments are the life of economic prosperity. If this is so, then, without a steady flow of new developments, prosperity cannot return or be maintained.—*Adelbert Ames, Jr., The Industrial Bulletin, Arthur D. Little, Inc.*

Fifteen Years Ago

(From our issues of June 1917)

Trial of Baugh Chemical's suit against Davison for alleged non-delivery of sulfuric acid ends in disagreement.

Plans are laid for the 3rd National Exposition of the Chemical Industries.

William H. Nichols is reelected chairman of the board, National Aniline.

Du Pont Company announces its entrance into the coal-tar dye industry.

John A. Chew, in charge of sales for British-American Chemical resigns to join Warner Chemical.

Warner-Klipstein (now the E. C. Klipstein Co.) doubles its plant capacity at Charleston, W. Va.

N. Y. Chemists' Club leases five floors in the Guernsey Bldg., adjoining the 10 story structure now occupied.

A Check Up On Congress

Below is a sample of the weekly bulletins Monsanto sends all employees and with it a statement from Merrimac why these companies want their people to know how their representatives in Congress vote on business measures.

MONSANTO and Merrimac executives have introduced an innovation into American business politics. Every employee is now receiving a weekly bulletin showing the names of congressmen representing districts in which Monsanto or Merrimac employees reside and indicating the stand each Congressman and Senator has taken in the preceding week on measures before Congress which affect the business of the company.

President Belknap's recent memorandum to Merrimac personnel gives concisely the reasons for disseminating this information. It reads in part as follows:

"The situation in the country as a whole, and in this Company in particular, leads me to write you all relative thereto. I do so from the basis of fact only.

"You must be aware that the volume of business done by this Company has declined rapidly. A similar situation exists throughout the country. We as individuals are dependent upon the volume of business for our jobs. There are causes for this decline in business that are of international and national character. You and I as voters can have

GENERAL BULLETIN

TO

NO. 88 **Date** 5/20/32

SUBJECT: Vote on the Economy Bill

Following my recent memorandum, the tabulation below indicates how each of the Members of Congress from Missouri and St. Clair County, Illinois, who are coming up for re-election this fall, voted on the recent economy measures:

	A	B	C	D	E	F	Number of Votes for Economy out of possible 6
Illinois:							
Karch	Yes	No	No	Yes	Yes	No	1
Missouri:							
Barton	Yes	Yes	No	Yes	No	No	3
Cannon	No	Yes	No	No	No	No	5
Cochran	Yes	No	No	Yes	Yes	No	1
Dickinson	No	Yes	No	No	Yes	No	4
Dyer	No	No	Yes	Yes	No	No	3
Fulbright	No	Yes	No	Yes	Yes	No	3
Hopkins	No	No	Yes	Yes	Yes	Yes	2
Johnson	Yes	Yes	No	No	Yes	No	3
Lozier	No	Yes	No	No	Yes	No	3
Manlove (not voting)		No	Yes	Yes	Yes	Yes	1
Milligan	No	Yes	No	No	No	No	5
Nelson	Yes	Yes	No	No	Yes	No	3
Niedringhaus	Yes	No	No	Yes	Yes	Yes	0
Romjue (not voting)		Yes	No	Yes	Yes	No	2
Shannon	Yes	No	No	Yes	Yes	No	1
Williams	No	Yes	No	No	Yes	No	4

A – Provided 11 per cent cut on salaries over $1000. Amendment made exemption $2500. "No" vote for economy.

B – Provided for recommitting the question of exemption from cut on a $2000 basis. "Yes" was favorable to economy.

C – Motion to recommit to committee so as to adopt 30-day furlough without pay. "Yes" was in favor of economy.

D – Provided that Saturday half holiday shall be abolished. Motion was to eliminate section. "No" was in favor of economy.

E – Motion to strike out section eliminating army transport and similar services. "No" was vote for economy.

F – Motion to strike out sections consolidating War and Navy Departments. "No" was in favor of economy.

some effect on trying to rectify some of the above mentioned causes. In my opinion the unwise and unruly actions of both branches of Congress have had a decided and disasterous effect on business, as these actions have caused widespread lack of confidence throughout the Nation. We all as taxpayers are interested in: 1. Cost of Government; 2. Balancing the budget; 3. Tax Bill. Until these three items are satisfactorily settled, we can expect no return of confidence and increase in business. Congress as a whole, up to the present time, has paid no constructive heed to any of them. There is a deficit in the Treasury, and still Congress advocates increased expenses and further raids on an empty Treasury.

"If you feel as I do about it, will you write directly to your Congressmen, Senators, and bluntly convey your thoughts? If you will send to this office a rough draft of your letter, it will be typewritten and returned to you for signature, or if you prefer, you can ask for a form letter at the paymaster's office, which you can sign and leave with the Paymaster for mailing.

"I have written and telegraphed repeatedly. Will you add your weight, as it is the only means a voter has to express himself."

Attacks Veterans' Legislation

The memorandum goes on to summarize facts on cost of government and the deficit in the Treasury. Turning to the bonus problem President Belknap writes, "As of March 31, 1932, the Veterans Bureau was paying compensation to 367,666 veterans not disabled in war. It is estimated by the Veterans Bureau that this number will reach 561,000 by June 1933. The legislation providing for this was passed in 1930, and has developed into a racket second to none but that brought about by our Prohibition Laws."

The actual mechanics of showing Monsanto employees how their representatives in Congress are voting on important economy measures is on page 531. The key letters, A, B, C, etc., identify bills acted upon in the previous week.

The plan of the Monsanto and Merrimac executives was not designed to coerce employees into action, but it is felt that the average citizen is aroused as never before and desires to express his or her opinion on matters vitally effecting the earnings and savings of everyone. The bulletins supply workmen, salesmen, and office staff with information they could not otherwise easily obtain.

German I. G. has acquired full control of the manufacture of Leunasaltpeter (ammonia sulfate-nitrate) through purchase of the 2,900,000 marks' worth of stock of the 6,000,000-mark Chemische Werke Lothingen, Gerthe, Westphalia.

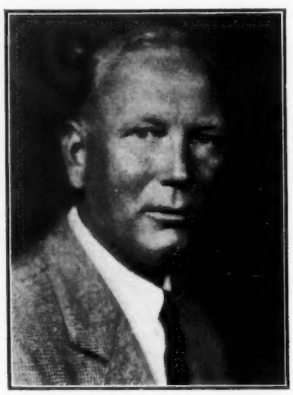
Burbach, third largest potash and largest oil producer in Germany, despite 1931 profits of rm. 7,000,000 against rm. 8, 600,000 in 1930 when a dividend of 12% was declared, probably will write down its capital and pass the 1931 dividend.

We Congratulate

George Lee Camp, June 11, 1882

Francis P. Garvan, June 13, 1875

Franklin C. Black, June 21, 1859



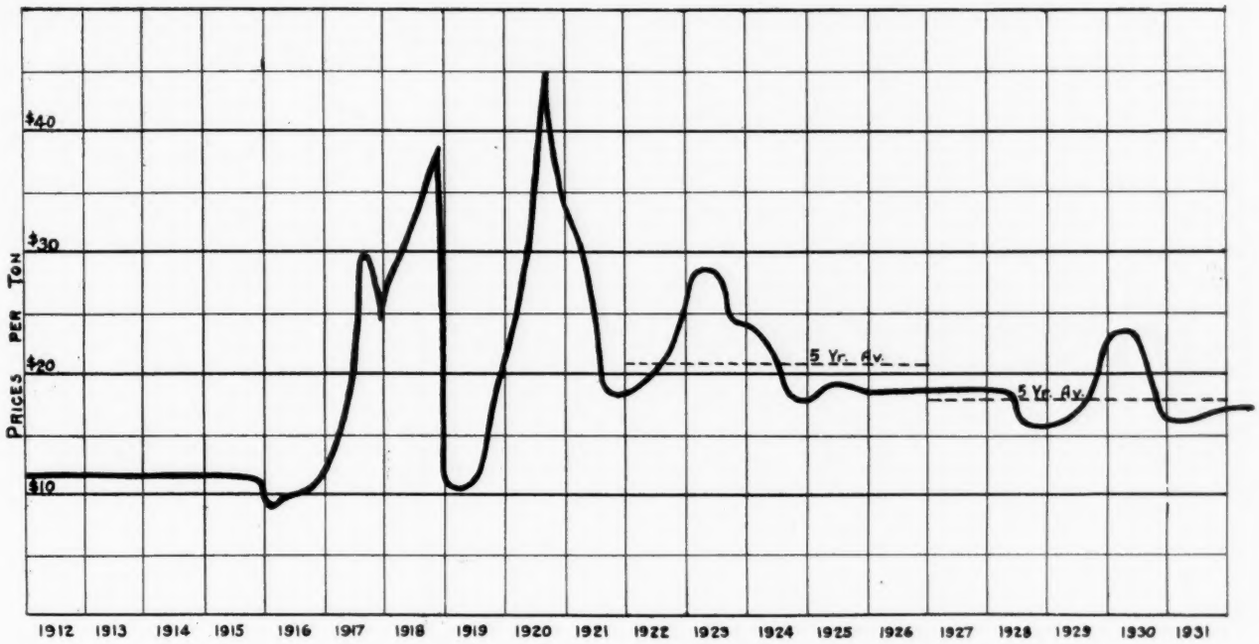
Salesmen's reputations are built of a wide variety of materials. Personality, expert knowledge, and hard work are all good bases but a rock-bound reputation for reliability is not only less common but even more secure. No sales executive in the industry is more honest in thought, word, and deed, than Lee Camp, of Monsanto. In such days as these, his word is not only better than most bonds: it is as good as gold. We congratulate him on being himself.

We like Frank Garvan for his friendliness and his loyalties. We admire the mountain of work he climbs under the painful handicap of ill health. We are astonished at his versatility, which ranges from an expert knowledge of hackney ponies to early American antiques; from wielding a stout cudgel for American chemical interests to the restoration of the old Carroll Mansion for Johns Hopkins University.

It's quite the fashion to give him medals these days and our congratulations would be but an anti-climax did we not know how much more the chemical industry owes him than can ever be repaid, and did we not feel sincerely that the good wishes and hearty hand-clasp of an old friend and admirer are enheartening to this warm hearted man.

For over half a century, fifty-five years to be exact, Franklin C. Black has been contributing his business foresight, backed with a growing experience and a canny Scotch caution to the success of Pfizer. For many years, he has served the fine chemicals branch of the industry, with good public service as Treasurer of the American Drug Manufacturers' Association. We hail him a valued, vigorous member of the Old Guard, and we wish him a full hundred years of active service. The present business crisis puts at a premium the services of such wise, cool leaders as he has proved himself.

Electrochemical Society elected the following officers: president, R. A. Witherspoon, Shawinigan Chemicals; 3rd vice-presidents, Duncan MacRae, E. M. Baker and Sterling Temple; managers, Acheson Smith, O. P. Watts, and W. S. Landis; treasurer, R. M. Burns; secretary, Colin G. Fink.



The Ups and Downs of Salt Cake

By Fred D. Hartford

PRICES of salt cake from 1912 to date, indicate how frequently the supply and demand of this chemical are out of balance. This condition is to be expected not only because of the sensitiveness of its chief consumers, the paper and glass industries, to variable operating schedules, but also to the somewhat precarious circumstances under which salt cake itself is produced.

With by-product cake, equivalent muriatic acid is produced which must be marketed with reasonable promptness because of the cost of storing it. Thus, a brisk demand for the acid piles up salt cake with a depressing effect on the latter's price. When salt cake requirements increase, if acid is in poor demand, then the reverse is true, but with the hitch that production of salt cake must soon cease in any plant that has no outlet for the acid, due, to the storage difficulty. There have been numerous heroic attempts by some salt cake makers, when prices were high, to neglect collecting the muriatic acid gas; but the devastating fumes have always led them into trouble with their neighbors.

The situation is further complicated by synthetic muriatic acid and by the decreasing production of nitre cake due to the manufacture of nitric acid from synthetic ammonia, instead of Chilean nitrate and sulfuric acid. This circumstance invites the development of "natural" sources of salt cake with no by-products difficult to dispose of at a satisfactory price, or at any price at all. Another unsettling factor is the increasing importation of foreign salt cake which has been detrimental to domestic prices.

An interesting example of the unbalanced demand for muriatic acid and salt cake exists in certain western states where metallurgical and galvanizing processes use muriatic acid in moderate amounts the year around, while the beet sugar industry concentrates a tremendous demand for it from October to December. Accordingly, salt cake accumulates in the fall and is ground up as needed throughout the year. The yearly demand for acid and cake never comes out even and calls for considerable sales artifices on the part of producers to get rid of their stocks.

Less important than other sodium compounds when judged by production, salt cake is still of a necessity in modern life. The pulp and paper industry takes the largest percentage of the output followed by glass-making, nickel refining, textile dyeing, rayon, and curing hides. The manufacture of water glass, sodium sulfide, sodium thiosulfate, and Glauber's salt takes a very large tonnage. To the glassmaker purity is important. The total uncombined acid and salt in the cake should not exceed four per cent and two per cent is frequently required, with a very low iron con-

tent. Salt cake is frequently added to boiler compounds to counteract certain caustic action. Glauber's salt, which incidentally is 56% water by weight, finds use as such in the dyeing and tanning industry as well as in medicines and stock foods.

Commercial salt cake is produced along with muriatic acid when common salt and sulfuric acid are heated together. The traditional apparatus is the "pot and muffle" furnace. The "pot" is a shallow cast iron basin six to ten feet across and a foot or more deep. Approximately equal weights of strong sulfuric acid and common salt are put into the pot and, after the initial run of gas has come off, form a residue which is raked through a door onto the muffle hearth. The latter consists of fireclay tile heated above and below from the same source of heat that supplies the pot. The muriatic acid gas from both the pot and muffle is drawn off by a fan and forced through towers over which water trickles and becomes the muriatic acid of commerce. The finished salt cake is raked out of the muffle periodically and stored under cover. Just before shipment it is ground, usually to 10 mesh. If the salt cake is sold under a specification limiting the amount of free acid or salt, then poor cake may be "doctored" with soda ash or nitre cake during the grinding process.

The "pot and muffle" furnace has been superceded in several works by mechanical furnaces which imitate in a measure the hand operations of the older type of apparatus. The hearths in the mechanical furnaces may be one beneath another, somewhat after the McDougal type ore furnaces, or may be combined in a single, long, narrow, slightly sloping bed along which the rabble arms push the cake, in the manner employed by the Edwards ore furnaces.

Nitre cake, which ordinarily is about one-third sulfuric acid and the rest sodium sulfate, may be used to replace an equivalent amount of acid in the salt cake furnace charge. This variation not only utilizes the acid in the nitre cake, but also puts the sodium sulfate in a form available for sale. Until recent years most plants found nitre cake difficult to handle and hard to sell.

High prices for salt cake have always stimulated the examination of its natural sources. However, the deposits of natural sulfate occur in western United States at considerable distances from consuming industries, so that freight is often an almost insurmountable barrier. In addition, the deposits are impure, requiring considerable refining and subsequent handling of waste material. These, with the fuel required to eliminate the water of crystallization from the Glauber's salt, into which form it is usually processed, bring the total cost to a figure that cannot compete when cake is selling under $16 a ton in the middle west.

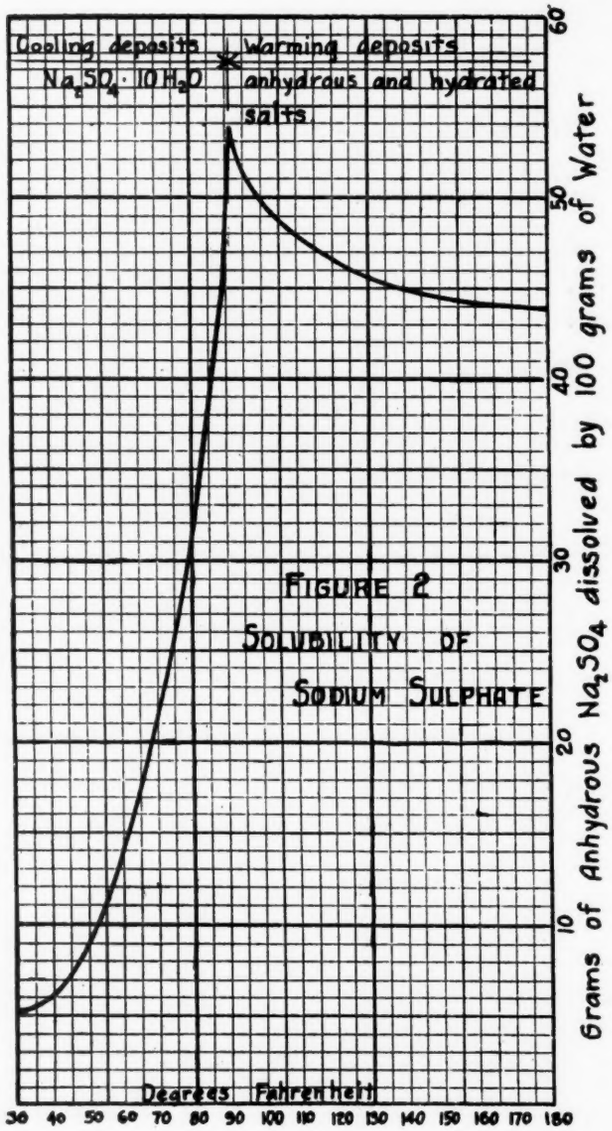


FIGURE 2
SOLUBILITY OF SODIUM SULPHATE

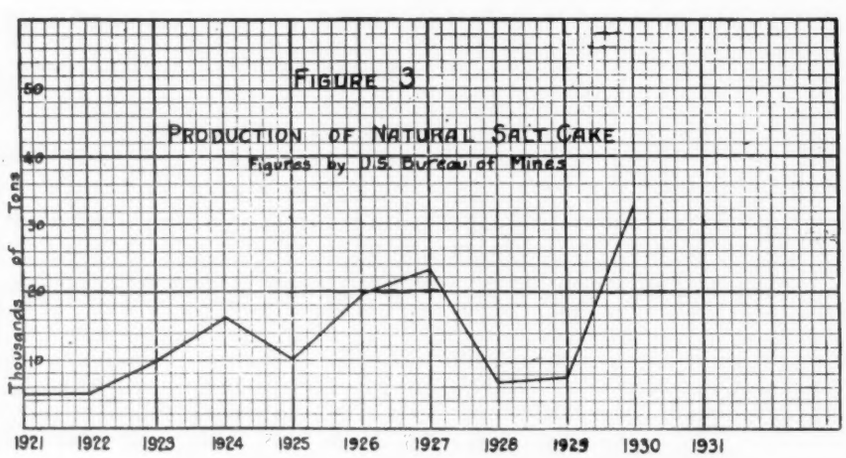


FIGURE 3
PRODUCTION OF NATURAL SALT CAKE
Figures by U.S. Bureau of Mines

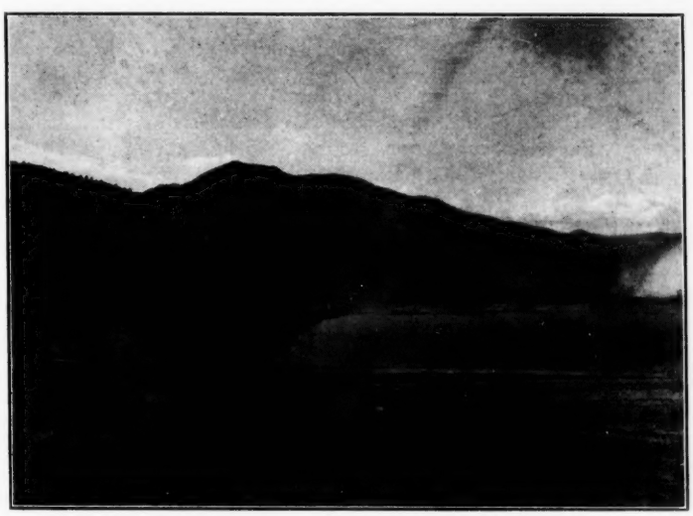
Natural salt cake deposits are of two types—those containing thenardite or anhydrous sodium sulfate, and those containing mirabilite, the hydrated form with ten molecules of water. The outstanding example of the first type is in the Verde Valley in Central Arizona. Here the deposit is some 50 feet thick and contains many millions of tons. The crude

material is quite clean but carries some 10% chloride which one process eliminated by selective leaching. The finished product is shipped east and west to the pulp and glass industries.

By far the most numerous deposits are of the mirabilite type, or perhaps better stated, are those containing impure Glauber's salt. Of these only the ones which contain very little sodium chloride or sodium carbonate offer commercial possibilities at this time, because of the cost of separating the salts. Of this type, two will be described; namely, that at Saltair on the east shore of Great Salt Lake, and of the Union Pacific Lakes in Southern Wyoming. The Great Salt Lake deposit might be said to be still in the making, that in Wyoming is of ancient origin.

Great Salt Lake has a mineral salt content of 23% compared with 3½% in sea water, and of the 23% about 3¾% is sodium sulfate. During cold weather, when there is freedom from wave action and from fresh water inlets to the lake, the sodium sulfate is precipitated as Glauber's salt. The precipitate, which is only very slightly heavier than the lake water, is occasionally cast up on the wide, flat shore by the wind. Ordinarily, the crystals redissolve on the coming of warm weather. However, the deposited salt may become mixed with the beach sand carried to the lake edge by the wind, and thus be protected in a measure from resolution. Or the hot sun or rain may cause the crystals to melt or dissolve and run down among the beach sand grains and crystallize again on cooling. The substance of the lake level over long periods of time may also contribute to salt deposition. Sodium chloride, contained in the crude deposit, is under four per cent.

The Saltair deposit extends several miles along the lake shore and varies in thickness from a foot at the water's edge, to five feet thick a quarter of a mile out, and 20 or more feet thick a half a mile out. So shallow is the water that one can wade out more than a quarter of a mile. The deposit, gray in color and about the hardness of lump sugar, is covered by about 18 inches of fine sand and is underlaid by a firm clay stratum. The material of the deposit contains about 30% sodium sulfate calculated as the anhydrous salt. This formation, probably typical of many others around the lake shore, contains not less than a million tons of salt cake, perhaps many millions. The lake water itself is estimated to carry not less than 30,000,000 tons. This deposit has been worked at various times by various organizations but, through lack of research both as to refining methods and as to markets, has yielded no commercial quantities.



A number of western "soda" lakes have been turned into irrigation reservoirs and their soda content gradually eliminated

The Union Pacific Lakes deposit, southwest of Laramie, Wyoming, doubtless originated from saline springs which have long since disappeared. The formation consists of a body of Glauber's salt from 9 to 14 feet thick. It is underlaid by a dense stratum of very even depth, and is covered by 3½ feet of clay above which is a maximum of six feet of water. The old lake bed was ordinarily dry until the use of water for irrigation in the vicinity caused it to fill again. Apparently the deposit is protected from solution by the layer of clay. Any commercial development here would probably require the drainage of the lakes.

This deposit was examined during 1921 by A. C. Boyle, Jr., Consulting Chemist of the Union Pacific Railroad. Advantage was taken of the fact that one of the lakes, Track Lake, was frozen over sufficiently to carry the weight of a man. Some 25 acres were marked off in one hundred foot squares and the deposit core drilled at the corners of many of the squares. The formation was found to be quite pure, containing about 41% anhydrous sodium sulfate with slight amounts of calcium and magnesium salts. The final product analyzed 96% sodium sulfate with no

evidence of iron. The area actually tested contains some 300,000 tons and doubtless represents but a small part of the total salt present. There are other deposits in Wyoming that appear equally promising but for the most part they are not so favorably located.

Most processes for refining natural salt cake depend on the well known separation of crystals of Glauber's salt on cooling a solution saturated at 90 degrees F. The crystals are next melted in their own water of crystallization and then on further heating yield the anhydrous salt. Figure 2 indicates how rapidly the Glauber's salt is precipitated by cooling. A solution, saturated at 90 degrees containing 100 pounds of anhydrous salt to about 200 pounds of water when cooled to 50 degrees will deposit about 80 pounds of crystals. Sometimes sodium chloride is eliminated by first washing the crude material with cold water. When the liquor used in leaching the crude deposit is sufficiently pure then crystallization may not be necessary and the anhydrous product may be obtained by completely evaporating the liquor.

Since natural salt cake is a marginal product, its output must correspond, though somewhat tardily, to the fluctuations in the market price. Figure 3, showing the production of natural cake since 1921, indicates that an appreciable proportion of the country's requirements of from 200,000 to 300,000 tons per year is being supplied from that source. The production of natural cake by Canada—principally Saskatchewan—will be watched with interest since her proven deposits exceed 100,000,000 tons, a considerable proportion of which is quite pure.

German Chemical Trade Declines

The difficulties which the German chemical industry is at present experiencing is reported by William T. Daugherty, Trade Commissioner at Berlin in a recent report to the Dept. of Commerce. Progressive depression is evident in German official chemical foreign trade figures for the first quarter of 1932. Volume exports fell 22 per cent compared with the first three months of 1931 and imports 41 per cent. Export values were 25 per cent off and import values 42 per cent less. Exports in the first quarter of 1932 were 738,274 metric tons, valued at 192,508,000 marks, against imports of 446,348 tons and 43,786,000 marks—a favorable balance of 291,926 tons and 148,722,000 marks, against corresponding figures for the first quarter of 1931 of 186,496 tons and 79,997,000 marks.

The drop in exports is most evident in the case of the artificial and mineral fertilizers, especially ammonium sulfate and calcium nitrate. It is notable that exports of synthetic sodium nitrate and potassium nitrate increased greatly. In the inadequately grouped official classification of heavy chemicals, including the nitrogen carriers and potash, January-March, 1932, exports dropped 33 per cent in value to 85,266,000 marks from the corresponding total of 127,003,000 marks in 1931. The "artificial fertilizer" group, including the prepared phosphates, only fell 37 per cent, from a value of 4,061,000 marks in the first quarter of 1931 to 2,539,000 marks in 1932. Losses in value were general throughout, but to a less marked degree, for dyes and colors, paints and varnishes, essential oils, explosives and matches, and pharmaceuticals. The U. S. increased its sales of certain metallic compounds, pyridines, and pyridine bases to Germany from 56 tons in the first quarter of 1931 to 209 tons in the three months of this year.

While the usual bulk trade in exports of nitrogen carriers—ammonium sulfate, calcium nitrate (and urea) and nitrophoska—fell off, special circumstances favored a decided increase in shipments of synthetic sodium nitrate. Combined tonnage exports of ammonium sulfate, calcium nitrate, and phosphoric acid salts dropped from about 193,000 tons, valued at 40,700,000 marks, in the 1931 three months, to 122,000 tons and 23,300,000 marks in the 1932 first quarter. On the other hand, a French order (Comptoir Francais de l'Azote), placed early this year, and believed to be for current deliveries of 150,000 to 200,000 tons product (25,000 tons N upwards), advanced exports of Germany's synthetic sodium nitrate from 13,000 tons last year to almost 60,000 tons this year (three months). The Leuna and Oppau works are reported as utilizing their full sodium nitrate capacity and even to have farmed out the excess demand with this order to others of its ammonia oxidation plants, as Hoechst, Bitterfeld, and Gerthe in Westfalen.

German exports of leading nitrogen compounds are recorded in the following table:

Comparative German Nitrogen-Carrier Exports, First Quarter of—

	1931		1932	
Item	*Tons*	*Marks*	*Tons*	*Marks*
Ammonium sulfate	116,658	21,903,000	108,700	10,169,000
Calcium nitrate	67,889	15,441,000	1,089	305,000
Other nitrogen fertilizers			6,949	1,352,000
Phosphoric acid salts	8,235	3,371,000	4,889	1,507,000
Sodium nitrate	13,242	2,293,000	59,490	7,930,000
Potassium nitrate	8,406	2,865,000	11,529	3,200,000
Ammonium cloride	4,942	1,205,000	4,149	774,000

America Buys Less Potash

German potash exports increased slightly in volume from 144,928 tons in the first quarter of 1931 to 148,337 tons in the 1932 months, but decline in value five per cent, from 8,068,000 marks to 7,663,000 marks. Exports to the U. S., which purchases kainite, 20 and 30 per cent manure salts, but no 40 per cent, fell slightly from 51,488 tons to 49,444 tons.

The export decline was even more marked in muriate, potassium sulfate, and potassium magnesium sulfate than in the fertilizer grades up to 42 per cent. They fell from 87,047 tons, valued at 13,414,000 marks, to 50,650 tons and 6,519,000 marks—a drop of 50 per cent in value. Exports of these items to the U. S. fell from a total of 39,307 tons to 9,557 tons.

Official figures of Germany's potash exports were contracted this year so that former subclassifications of carnalite, kainite, refined manure salts up to 42 per cent, and abraum salts are combined in one classification, while sulfate figures include muriate and potassium magnesium sulfate, formerly classified separately.

Dye Sales Are Discouraging

Coincident with the German Dye Trust's 1931 annual report of a "certain stability" of dyestuffs sales last year, the following official export figures for the first three months of 1932 show a volume decline of 34 per cent, from 12,380 tons of the combined classifications to 8,146 tons:

German Exports of Dyestuffs, First Quarter of—

	1931		1932	
	Tons	*Marks*	*Ton*	*Marks*
Aniline dyes	8,823	36,602,000	6,415	32,027,000
Alizarin	202	2,358,000	237	2,845,000
Alizarin red	299	488,000	354	499,000
Indigo	3,056	6,040,000	1,140	3,520,000
Total	12,380	45,488,000	8,146	38,891,000

Exports of aniline dyes to the United States increased from 231 tons to 252, of alizarin from 25 to 29 tons, and of indigo from 15 to 17.5 tons, in the period under scrutiny.

Oberkoks (Kokswerke und Chemische Fabriken A. G.), of Berlin, one of the most liquid of German industrial concerns, with large interests in drug and photographic trades, has bought control of Borsig Werke A. G., operators of iron furnaces and coal mines in Upper Silesia. Oberkoks has large interests in chemical factories and collieries in that district.

What Do We Mean -- Research?

Reactions to our editorial of last month under this title indicate two schools of thought. The one believes that it is impossible to get too much of a good thing; the other, that the misuse of research is the responsibility of the executives. We are still seeking a workable definition of what is, and what is not research, for the benefit of the man who plans the research program, and the one who pays the research bills.

Credulous Executives

By Carl S. Miner
Director, The Miner Laboratories

I am entirely in sympathy with your view that research has been oversold to industry and that the result has been bad both for industry and for science. I do feel, however, that this situation has resulted not only because of over-enthusiasm on the part of the proponents of research but almost as much because of over-credulity on the part of those managing industrial enterprises.

Industrial research should be the effort of workers properly qualified by nature, training, and experience, to develop something new and useful for an industry. If the heads of the business use the same intelligent effort in the selection of research problems and personnel that they expend on their other executive functions, and if they maintain the same active interest in, and supervision over this department as over other departments of the business, profitable results will come. Science can be made to yield profits through research, but business executives must learn that successful research requires more from them than the mere signing of checks.

Today's Research Values

By J. S. Long
Research Director, Archer-Daniels-Midland Co.

I will limit myself to research in the protective coating industry. One of the first objectives is to increase durability of paint and varnish coatings in order to make their use more attractive and widespread from the point of view of protecting the surface of wood or metal over a large number of years. Many buildings are unpainted because the protection afforded by the paint is not long enough to justify the painting from an economic point of view. If we can increase the life of the protective coating film we increase the likelihood that the building will be painted.

Nearly any paint improves the appearance and makes the surroundings more cheerful but we are also learning how to paint for beauty as well as for protection. We want our paints to stay clean and not retain dirt.

Of course, in line with modern tendencies we want our paints, varnishes and other protective coatings to dry and harden quickly so that the periods of inconvenience are minimized.

Research in the field of drying oils, paints, varnishes and other protective coatings has these as some of the general objectives. Progress is being made along these lines and the research worker in this field feels that he is helping to make the world a better place to live in.

Aside from these specific points, research is a point of view, a habit of seeking to improve, of using our talents and resources to the greatest possible advantage. Research has been defined as "The opposite of being absorbed in the obvious." On this basis our research workers follow up and develop natural observations and phenomena without knowing where they will lead, but recognizing that they are extending the frontiers of human knowledge. Practical application of most of this development and discovery, comes in due time.

To Maintain Leadership

L. M. Henderson
Atlantic Refining Co.

The research idea has been oversold in some instances because industrialists have not been fully informed of the many new and sometimes startling results which come to their attention in the press and elsewhere. They have not been adequately enlightened with respect to the long and arduous work which has preceeded the "discovery" so glowingly announced to them in terms of results only. Consequently some executives have expected research chemists to perform as magicians. Real research is not a work of magic. The research chemist aims to

conceive and not to deceive, and real research is designed to conceive and develop basically new relationships and laws, new products and new processes. Real industrial research aims to enable executives of a company to maintain leadership for their firm's products in a competitive market.

An industry must either go forward or fall behind. In modern times, control of natural resources, cheap labor and similar items while powerful devices, are today not alone lasting guarantees of profits. Organizations with capable research staffs are finding ways and means of substituting one natural resource for another, are devising new processes which minimize labor costs, and are finding new products which displace the old. Examples of what has been accomplished in this direction are evidence of what the chemical industries may expect from real research in the future. Through research the chemical industries of Germany and the United States have been enabled to compete with Chile for the nitrate markets of the world. Synthetic camphor is now competing with natural product; synthetic methanol has displaced this alcohol as made by the destructive distillation of wood. Artificial silk is competing successfully with silk in many markets, special alloys are replacing other materials, and new solvents and lacquers are finding profitable markets not realized to older products. This list might be continued to a very considerable length.

Thus real research contributes to the advancement of a company while chemical work devoted exclusively to testing and control of current production, although distinctly essential, is primarily a cog in a machine designed for the maintenance of a status quo. In the present day this is not sufficient. A company must go ahead or it falls behind. The fruits of real research, when intelligently exploited will enable it to go ahead.

Digesting Research

F. W. Sperr

Koppers Research Corp.

I am very appreciative of your editorial with which I heartily agree. Although I have seen some of the effects of a reaction against research, I am personally not very apprehensive over the situation. True research is vital not only in the chemical industries, but in every industry; and the more progressive concerns are recognizing it as such and are doing their best to maintain a fair proportion of it, even at the expense of drastic curtailment in other directions.

A good deal of the present trouble is due not to the research organizations, but to a certain incapacity on the part of many industries to digest research developments. What is needed in many cases is more efficient organization for giving the public the prompt benefit of the results of research.

Association News

Association activity was limited in the past month largely to preparations for future meetings. June is the traditional convention month. On June 2-3 the Manufacturing Chemists' Association is scheduled to again meet at Absecon (reported elsewhere in this issue) The National Fertilizer Association returns to White Sulphur, June 6-8. The American Institute of Chemical Engineers will convene June 15 at Schenectady and later Corning, and the American Electroplaters' will gather at the Benjamin Franklin in Philadelphia June 20.

The Insecticide and Disinfectant Manufacturers' Association held its mid-year meeting at the Edgewater Beach, Chicago, May 23-24, The American Oil Chemists' found New Orleans a delightful place May 16-17, and the N. Y. Section of the Electrochemical Society held an important sectional meeting May 20.

The four business sessions of the Insecticide and Disinfectant Manufacturers' Association meeting were given over chiefly to addresses and discussions, mainly sales problems, testing and standardization of finished products, marketing abuses and scientific developments of interest to the industry. An innovation at this meeting was the appointment of discussion leaders on each topic to insure open floor discussion of any material of interest.

Leading speakers were: C. C. Concannon, Chief of the Chemical Division, U. S. Bureau of Foreign and Domestic Commerce, who spoke on "What the Bureau of Foreign and Domestic Commerce is Doing for Other Industries," L. M. Barton, Major Market Newspapers, Inc., on "Selling Insecticides—How, When and Where," W. J. Andree, Sinclair Refining Co., on "Do Bulk Buyers Want Price or Quality," W. J. Zick, Stanco, Inc., on "Marketing Abuses in the Insecticide Industry," A. C. Grady, Sinclair Refining Co., on "The Life and Early Struggles of the Fly, Roach and Bedbug," and N. J. Gothard, Sinclair Refining Co., on "What is a Proper Insecticide Base." The program was arranged by W. J. Andree, Chairman of the Program Committee, and Harry W. Cole, Secretary of the Association and Chairman of the Convention Committee. Evans E. A. Stone, President of the Association, presided at the sessions which were attended by approximately one hundred and fifty members and guests.

N. C. Hamner, of the Southwestern Laboratories, Dallas, Texas, was elected president of the American Oil Chemists' Society for the coming year. Other officers elected at the close of the twenty-third annual meeting held May 12 and 13 at the Jung Hotel, New Orleans, were: First vice-president, J. P. Harris, Industrial Chemical Sales; second-vice-president, A. F. Sanchez, Gulf and Valley Cotton Oil, New Orleans; third vice-president, G. K. Witmer, Battle Laboratories, Montgomery, Ala.; fourth vice-president, Archibald Campbell, consulting chemist, Cincinnati, and secretary-treasurer (re-elected), J. C. P. Helm, consulting chemist, Helm Laboratories, New Orleans.

"Selection and Organization of Research Problems" was the subject of a symposium before the Northeastern Section of the A. C. S. Speakers who are moving spirits in the research organizations of du Pont, General Electric and Bell Telephone companies spoke on various phases of this vitally important subject. The meeting was held at the main auditorium of the Massachusetts Institute of Technology on Saturday, May 7. Dr. Charles M. A. Stine, vice-president of du Pont was a guest.

Wendell Walker delivered a talk on the "Mystery of the Mayas" before the Chicago Rug and Chemical Association luncheon May 26.

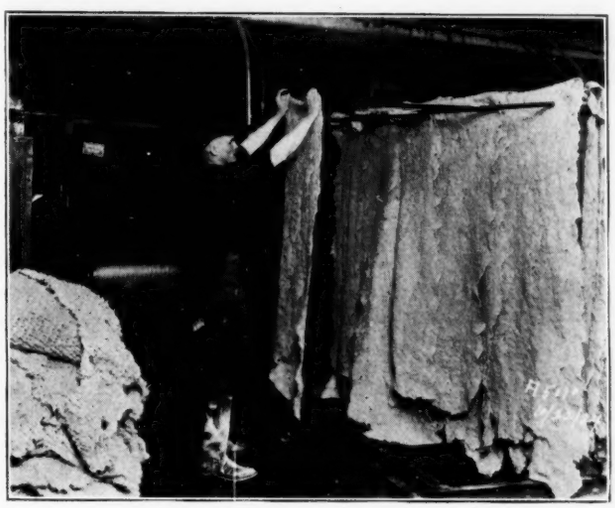
Society of Chemical Industry and the American Chemical Society, the Electrochemical Society and the Societe de Chimie Industrielle held a joint meeting on May 13, at The Chemists' Club. Program was devoted to the presentation of a paper by Edgar C. Bain on "Some Fundamental Characteristics of Stainless Steels."

Sulfur Heat Rubber

The Chemical Problems of Vulcanization Reviewed by Norman A. Shepard

VULCANIZATION can be defined as the process of combining sulfur with rubber under the influence of heat. What actually brings about the remarkable change was a question over which raged a violent controversy between chemists and physicists. It is now definitely established that sulfur goes into chemical combination, but most rubber technologists now hold to the view that the result is due to the combined action of chemical and physical forces.

The physical changes which rubber undergoes during vulcanization are most interesting. Raw



Crude rubber being washed and dried preparatory to its manufacture into tires

rubber is both a plastic and an elastic solid, the former property largely overshadowing the latter. This accounts for the changes it undergoes with changes in temperature. After vulcanization, the elastic property predominates, and to such an extent that the plasticity is a minor characteristic.

The progressive nature of the reaction is clearly evident when a mixture of rubber with a large percentage of sulfur is heated. For example: if we mix 100 parts of rubber with 50 parts of sulfur and a few parts of zinc oxide, in the presence of certain catalytic agents, or promoters of vulcanization, and heat the mixture in molds at 40 pounds' steam pressure (286°F., 141°C.) for increasing periods of time, products of markedly different properties are obtained. The change is a progressive one, and there is no point in the course of the reaction where definite chemical compounds can be isolated until the end of the reaction is reached. It is found then that sulfur has added in the proportion of one atom of sulfur to one molecule of rubber hydrocarbon, C_5H_8. At the end of 10 to 20 minutes, in the case cited, "soft" rubber samples are obtained. These are highly elastic and will contain from, perhaps, 0.5 to 3.0% of chemically combined sulfur. Products of this nature constitute those used in the tread and carcass of automobile tires and other "soft" rubber goods, as regards degree of vulcanization. This stage of vulcanization gives products of the greatest value, as there are no substitutes for them. In from 30 minutes to one

Final inspection of the finished tires

hour of heating, samples are obtained which are still soft, but very weak and which break with a brittle fracture. Rubber in this stage of vulcanization is worthless, having lost its elasticity to a very large extent. These samples will contain from 4 to 15% of sulfur combined with the rubber. After 90 minutes

of heating, the elasticity is practically gone, and a tough, semi-hard product is obtained which, again, has limited commercial value. In from 2 to 3 hours of heating, this particular mix will contain up to 47 parts of sulfur combined with 100 parts of rubber, or in some cases, even slightly more, if substitution as well as addition of sulfur has occurred. These products are very hard and constitute the hard rubber of commerce.*

The heat both to mold rubber articles and to bring about the vulcanization, is a necessary evil. Raw rubber when heated alone first softens, then melts, and finally, if the temperature is sufficiently high, distills, producing among other products a mobile, low boiling, ethereal liquid, known as isoprene. This material boils at nearly the same temperature as the ordinary ethyl ether used in anaesthesia (99° F., 37° C.). This clearly demonstrates that heat is detrimental to rubber. The change is just the reverse of that which is brought about by the chemical combination with sulfur, which stiffens and hardens the rubber. Obviously the duration of the heat treatment should be kept at a minimum so that the minimum deteriorating effect will result.

Chemicals Strong Factor in Vulcanization

This is where the chemist may be said to have made his first great impress on the rubber industry. He first found that certain chemicals, such as lead oxide (litharge) or basic lead carbonate (white lead) and the oxides of calcium (quick-lime) and magnesium (magnesia) speeded up the vulcanization of rubber, that is, catalyzed and accelerated the change. These substances became known as "accelerators," without which only inferior products could be obtained.

Early in the present century Oenslager discovered a new class of chemicals which have an even greater influence on the rate of vulcanization. These belong to the class of chemical compounds known as organic (carbon compounds) and are spoken of as organic accelerators. Among the early chemicals used were aniline, thiocarbanilide (a reaction product of aniline with carbon bisulfide) and hexamethylenetetramine (the Urotropin, used medically as an internal antiseptic). Additions to the list of active catalysts have made it possible to "cure" (the practical rubber man's parlance for "vulcanize") rubber in a fraction of the time required with the former materials.

It is now possible, through the use of certain very active catalysts, to cure rubber in as many minutes as it formerly took hours. Inner tubes of the smaller sizes are now cured in from 5 to 10 minutes, or even less. These same substances also made it possible to vulcanize at much lower temperatures, even at the temperature of boiling water. At ordinary room temperature, vulcanization in the presence of certain of these substances takes place in a few days, giving products of great strength and elasticity. In addition to the improved quality brought about by the reduction in time during which the rubber must be exposed to the deteriorating effect of heat, these catalysts have specific beneficial influence on the strength and elasticity of the vulcanizate. They definitely improve the wearing qualities, not to mention the marked saving in manufacturing costs effected through shortening the vulcanization cycle.

The Aging Problem of Rubber

However not all the objectionable features of rubber were removed by vulcanization. One very serious problem was yet to be solved, and this was the aging problem. Like all materials of colloidal and elastic nature, among which may be mentioned silk, our own arteries, and various other organic materials, rubber loses elasticity on aging. Unfortunately the vulcanization process, which stabilized rubber against rapid change with change in temperature, actually increased the tendency for rubber eventually to lose its elasticity. Raw rubber, unless exposed to sunlight, has a long life; samples of raw rubber can be kept for years, with little or no change, unless subjected to sunlight or high temperature. Oxygen, an enemy of rubber, coupled with physical degradation, caused rapid loss in elasticity, with the result that soft rubber articles became hard and cracked, or in some cases soft and sticky, in a few years. Last year's hot water bottle was found to be leaky. Rubber articles kept in a stretched condition, such as rubber bands, garters, or footwear, were found broken, cracked or inelastic.

While the rubber chemist has not completely solved this problem, he has discovered "antioxygens," or "antioxidants," which protect rubber from this degradation to a very large extent. Properly vulcanized rubber containing these materials, which like the accelerators are organic substances related to aniline (if somewhat distantly), may actually appreciate over a very considerable period, and will retain its useful life over many years. It is safe to say that properly compounded and vulcanized rubber ages from 5 to 10 times as well as formerly.

It should be noted, in discussing aging, that emphasis has been laid by the author on *properly compounded and properly vulcanized rubber*. No amount of antioxidant will preserve a rubber product which has been greatly "overcured." Obviously, for most purposes, high tensile strength is desirable in a rubber compound. The proper cure for such a rubber mix would lie in the neighborhood of 50 minutes, where both stiffness (modulus of elasticity) and tensile strength are close to the maximum. Longer curing will be accompanied progressively by poorer quality.

"Blooming" of the sulfur is visible evidence of an excess of sulfur, for at ordinary temperatures soft rubber goods will hold in solution only approximately 1% of free sulfur, any in excess of this crystallizing

*It should be pointed out that the recipe chosen to illustrate this range of rubber products is not a commercial one, except for hard rubber. The concentration of sulfur in commercial compounds closely approximates the amount which it is desired to combine.

both in the interior and on the surface of the article. Aside from the unsightly appearance, excess sulfur may be highly detrimental. This holds true where the rubber article is subjected to high temperatures during service. If the temperature is sufficiently high to cause vulcanization to continue, the product will become brittle and weak. On the other hand extremely low combined sulfur with no free sulfur present, will, under high temperature conditions, result in softening or reversion of the compound, again with accompanying loss in strength. Of the two evils, the latter is less to be feared in general. For most purposes a non-blooming product is preferable to one which blooms.

Curing Temperatures

It seems logical that the lower the curing temperature, the better the quality of the product. It is the writer's opinion that this is true. Of course, if the curing temperature for a given compound is low, the duration of the cure must be increased very appreciably over that required to produce the same state of cure at a higher temperature. If the time and the temperature of cure are properly balanced, the initial properties at proper cure are approximately equal. However the thickness of an article modifies the actual curing conditions which must be adopted. The heat conductivity of rubber is low, (0.00032 cal. per cu. cm. per second) so that in thick articles even where heat is applied from both sides, the problem of obtaining uniform cure throughout the article is a serious one. A low curing temperature, requiring a longer time of cure, is advantageous as it allows the heat to flow into the center of the article, effecting a satisfactory cure there, without overcuring the exterior. Prior to the discovery of accelerators which provide a broad curing range and permit curing at lower temperatures, "step-up" cures were necessary, as, for example, a cure such as the following:

100 minutes at 240° F. (115° C.)
80 minutes at 270° F. (130° C.)
85 minutes at 300° F. (150° C.)

There is a distinct trend in the industry today toward lower curing temperatures.

While there is no great difference in initial properties, there is a definite trend toward better aging of products cured at lower temperatures. However the selection of the curing temperature should be influenced by cost (as the longer cures necessitated by lower temperature of curing decrease the production per unit of curing equipment) by the thickness or size of the article, and by the severity and nature of the service conditions to which the article will be exposed.

Vulcanization may be effected in hot air, in hot water, in open steam, in molds in platen presses under hydraulic pressure, in autoclaves where the molds are closed and held under hydraulic pressure, and in jacketed molds. Each method has specific applications, and it cannot be said that any one process is superior for all purposes. In general, hot air as a heating medium is used only where necessary, as, for example, in footwear manufacture. Air is a very inefficient heating medium and, unless circulated at high velocity and under pressure, leads to porosity in the product and non-uniform cures in the various parts of the oven or heater, together with deteriorated properties owing to oxidation.

Canadian Chemical Products in 1931

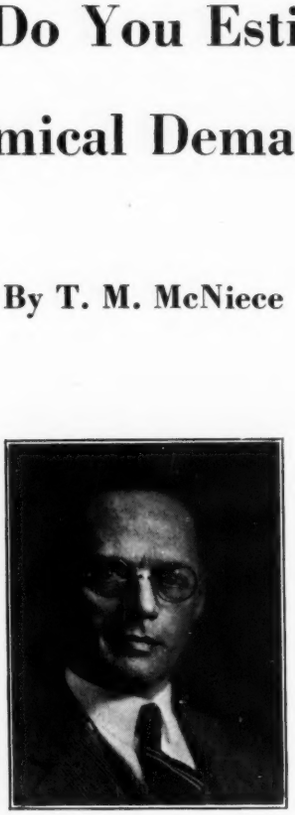
The Canadian production of chemical and allied products in 1931 was valued at $101,137,499 as compared with $119,969,637 for the previous year a decline of 15 per cent. Imports amounted to a total of $31,336,994, as compared with $36,785,050, in 1930 a drop of 15 per cent. Exports totalled $10,848,946, as against $16,320,505. Ten of the 14 groups into which this industry is divided show a decline, while four report a higher production. Toilet preparations at $5,172,039, polishes and dressings at $1,475,058, and flavorings extracts at $1,609,502 all show slight gains over 1930, and the fertilizer industry increased from $2,504,575, to $4,147,315. Among the industries showing declines the acids, alkalies and salt groups suffered the greatest. Production of these heavy chemicals fell from $20,111,602, to $10,767,219. The paint industry dropped 20 per cent from $23,966,502, to $19,182,327, soaps and washing compounds dropped from $18,167,838 to $16,822,000, medicinal and pharmaceutical preparations declined 1.4 per cent; coal tar products 23 per cent; inks 10 per cent and adhesives nine per cent. There were 592 plants engaged in the industry employing a total of 14,317 persons who received in salaries and wages $20,223,662. Capital invested was $161,063,565, and the cost of material used $39,675,610. The value of products made for sale was placed at $101,137,499 and the value added by manufacturing was $61,461,839.

Hydrogen Peroxide Industry in Italy

Italian hydrogen peroxide industry according to a review appearing in a recent issue of *The Chemical Trade Journal* (London) has been making considerable progress in recent years, particularly since 1926, when the electrolytic process for the manufacture of concentrated peroxide was introduced. None the less, although exports have risen from two metric tons in 1929 to 105 metric tons in 1931, the growing domestic consumption of peroxide, and the price advantage of some imported material have resulted in a rise in imports from 205 metric tons in 1926 to 282 metric tons in 1931. No actual output figures are available for any period later than 1929, in which year there were made 344 metric tons of the ordinary strength peroxide and 140 tons of the highly concentrated material. The following firms are given by "Dr. Z.," who writes in "Die Chemische Industrie" of May 7, 1932, as manufacturers of hydrogen peroxide in Italy: Adolfo del Panta, plant in Brozzi, Peretola (Florence), (12 Vol.); Carlo Erba, Soc. An., plant in Milan and Dergano (12 Vol. and 100 Vol.); Fabbrica Acqua Ossigenata e Derivati, Soc. An., plant in Linate al Lambro (Milan) (100 Vol.); Fabbrica Italiana di Estratti Specialita, Soc. An., plant in Ferrara; Figini Vito, Acqua Ossigenata e Prodotti Chimici, plant in Ravenna (12 Vol.); "Ledoga" Soc. An., plant in Garessio (Cuneo) (12 Vol.); L. e C. Molteni, Stabilimento Chimico-farmaceutico ed Industriale, plant in Florence; Camillo Plancquel, plant in Torre del Greco (Naples) (12 Vol.). The largest producer is probably the Fabbrica Acqua Ossigenata e Derivati of Milan. This company has a capital of 1.5 million lire, and produces hydrogen peroxide by the electrolytic process up to 135 volumes in strength. Its manufacturing capacity is understood to be great enough to supply the whole of the demands of the Italian home market, and it also produces ammonium and potassium persulfate, and zinc and magnesium peroxide.

How Do You Estimate Chemical Demand?

By T. M. McNiece



PROFITABLE distribution constitutes one of the most important problems facing business today. The whole field of sales is in a turmoil. Manifold and diversified competition is encountered at every turn. The great merger movement will no doubt continue. These developments have a vital bearing on the problem of sales. This state of flux will of necessity ultimately force a realignment of sales methods and costs. Greater and greater concentration of buying power is occurring in the field of industrial marketing. More and more contracts are consummated at points remote from the place of use. The increased concentration through consolidations is affecting the factor of reciprocity.

With these points in mind a questionnaire bearing upon the problem of market analysis was mailed last year to 466 members of the American Management Association.

The aim was to point the way, if possible, to better organization and coordination of effort in:

1. Determining what is really needed.
2. Developing agencies and methods for securing and using such data.

Eighty-eight replies to the quentionnaire were received. Of these, 72 were available for classification, 66 in definitely classified industries, six in consulting and service agencies. Twenty-six different classes of industry were represented.

The first question was, "Do you estimate total demand for your products?" When we hear so much about over-production, it seems important that some reasonably accurate measure of potential demand be formulated. The belief existed that a relatively large percentage of companies, though compiling sales budgets, has a comparatively slight knowledge of total market demand. Seventy-two replies to this question were received. Of these, 47 answered "yes," 20 answered "no" and five reported that they partially estimate total demand. Aside from those companies who have not yet taken the problem of market determination seriously, the outstanding reason given for failure to estimate total demand is the lack of information that will make this possible.

Prompting the second question, "Do you estimate your share of such demand in totals and by territories for your products?" was a desire to determine the extent to which the industries measure their own efforts in comparison with total demand and also the relative degree to which industries recognize the need for measuring performance by territories. The practice indicated by the answers is almost identical to the first question. Of the 71 replies received, 51 answered "yes," 13 answered "no" and seven indicated that totals only (not by territories) are estimated. While many exceptions exist, it seems obvious that much remains to be accomplished in measuring relative success in terms of potential or total available demand by territories. Knowledge of these factors is virtually essential if rate of progress in the various territories is to be ascertained. This information, in turn, is necessary for the intelligent formation of proper sales policies for current and future market development.

To gain some idea of the adequacy and acceptability of published data commonly in use, the next question was, "Are the estimated totals and your share determined through use of published data?" Sixty-five answers to this question were received. Fourteen were "yes," 25 "no" and 26 "partially." It is clearly demonstrated that published data in themselves are generally quite inadequate to meet many problems. It is very desirable that published

data should be supplemented by material privately gathered where feasible. This is the practice indicated.

The primary purpose in asking the next question, "What data do you use in compiling this information?" was to learn what concentration exists in any sources of information and to uncover any unusual source. Twenty-one use their own data; 12 use data from trade associations; a large proportion use data from a wide variety of sources such as government departments, trade journals, trade directories, catalogs, etc. Forty-five companies made suggestions in one form or another regarding desirable data now unavailable according to their information. A highly significant number of cases indicate principal dependence on trade association data and others rely strongly on trade and other publications. In our opinion, this is extremely important and may properly assume increasing importance in the future.

"What data now unavailable to you would you like to have and in what geographical subdivisions?" Forty-six of the replies received indicated a desire for more specific information. Of the remaining 26, nine do not make estimates and 17 have a sufficiency of data. Many were using their own and trade association data. Data by counties were very generally requested although a fair proportion of the companies would be satisfied with data by states. This latter division may be satisfactory for those industries dealing directly with their customers. Those companies whose products are distributed through wholesalers or other agencies can gain a much better knowledge of market characteristics by securing their data by counties because wholesale trading areas are not confined by state boundaries but rather are determined by topography of the country and availability of communication and transportation facilities.

The data designated as desirable but unavailable are so widely variable as to defy classification.

Collection and Use of Marketing Data

In proceeding further with a discussion of organization for meeting this problem, it will be of interest to consider the present situation as it applies to the existence, collection and use of marketing data.

The various governmental agencies and bureaus have on record and are collecting a vast quantity of both routine statistical data and of information resulting from specific investigations. Some of this is necessary for the proper conduct of the government itself but a great amount of it is not necessary for operating functions. Such material has been collected largely for the use of industry. Another outstanding job in the collection of data is being done in many industries by trade associations. These groups are much closer to the point of actual use and presumably should be in a better position to determine what is really needed. Most companies interested in market analysis privately gather much information of value and undoubtedly there are many cases where such information coupled with that from various publications is sufficient for the purpose. Still another and very important source of statistical data is found in the trade and other magazines which are frequently in an advantageous position to accumulate useful facts.

There are, therefore, these four major sources of market information. Each is in position to perform some functions better than the others. On the other hand, there is no doubt that this same situation results in multiplication of effort through overlapping of fields covered. The situation also tends to promote the collection of data in many forms that may be useless.

Determining Necessary Amount of Data

In determining what data are needed for measuring market demand, three questions should be kept in mind: namely, how much, where and when.

The first or quantitative measure is essential from every standpoint. It governs investment both in plant and inventories and is the factor which must be thoroughly evaluated in establishing policies and methods. The facility with which such data can be collected will depend upon the degree of coordination attained among those agencies in the best position to secure the information. In many cases, direct quantitative measures may be virtually non-existent. Under these conditions, dependence may have to be placed upon related data such as personnel employed, power consumed, and other factors. Any such information should be tested as far as may be feasible to determine the relative accuracy with which it will indicate demand.

When several industries are users of any commodity, the usage by industries should be determined and constant watch kept upon trade levels and trends in those industries. In the case of more important customers, their industries should be watched to avoid possible losses through obsolescence of their processes and products. The acquisition of such knowledge should not be left to chance. There is much more to the problem of measuring demand than is involved in the process of estimating one year's requirements from the sales of the prior year.

The second question to be answered covers the geographical or territorial phase of the problem. The determination of these points vitally affects the location of plants and warehouses and the number and routing of salesmen employed. It is directly concerned with the control of selling and distribution costs. When severe competition exists, the location of competitors' plants and warehouses with respect to centers of demand may also have to be carefully studied. Data for measuring demand should be

collected by those geographical units that will best permit their combination to fit logical trading areas.

The third question, concerning the time when demand will be encountered involves not only the seasonal and secular trends but also the surging characteristics so important today. In the light of present industrial and trade conditions, the question assumes much greater importance than would have been generally admitted three or four years ago. The measurement of seasonal variations offers relatively little difficulty. The variations themselves, however, frequently offer great manufacturing difficulties, especially from the standpoint of stability in costs and of labor requirements. This is especially true of semi-perishable, perishable and style goods. As long as yearly models of automobiles prevail, they constitute a good example of a most important commodity with a strong style appeal. In many cases, the introduction of new models is so timed as to accentuate the natural seasonal surge in demand. This in itself promotes an unstable condition in this great industry and its affiliated branches.

Knowledge of Per Capita Demand Imperative

It is most important in evaluating demand to know whether the product involved is, on the long pull, meeting with an increasing, a decreasing, or a stable *per capita* demand. It should be realized that all demand, whether for industrial or consumer goods takes root in, and is dependent on, the summation of individual requirements. For the long term, therefore, it is proper to measure the use of any product in terms of population.

The most pressing topic of the day is the current condition of industry and trade. Here, indeed, is the timing of demand admittedly important, for the present at least. It is safe to assume, however, that in the midst of the next period of inflated business, the present situation will again lose most of its force in the minds of men. It is entirely probable, however, that so-called "new eras" will encounter much slower recognition.

The economic surges resulting in repeated periods of expansion and contraction have troubled and puzzled mankind for generations. These surges are increases and decreases in volume with the passage of time and lead directly to the importance of determining volume in terms of time. In fact it is our inability to answer this question "when?" that has created such an insistent demand for accurate forecasting—as yet an unrealized desire.

Analytical work is now underway on a few major industries. It has proceeded to a point where we can say definitely that certain periodicities are inherent in some industries. Other and important forces are at work, but it seems possible that in these complex relationships and influences just described, we are finding some causes of first movements in our economic cycles.

These are primarily problems in evaluating demand. In many lines, we have a great abundance of statistics and in the aggregate such a mass of them that they defy interpretation. One thing is clear however; that is a great lack of statistics on demand as distinguished from production. This statement applies with particular force to measures of consumer demand in which all other activities take root.

One of the many causes of our recurring business cycles that is commonly given is over-production. If over-production does exist, it must be found in inventories. Such evidence is sadly lacking. We need data that will show the simultaneous trends of production, sales, and inventories.

To recapitulate, the technique of estimating market demand can be much improved; that data are incomplete in many respects; that better coordination in the determination of data required and in its collection should be accomplished. With respect to the nature of data required to estimate market demand, we may suggest that basically, no matter what the industry or its method of distribution, we must know what that demand is, where it will arise and when it will occur.

Company Booklets

Acheson Oildag Co., Port Huron, Mich. An eight page leaflet describing the mechanics of lubrication with colloidal graphite.

J. T. Baker Chemical, Phillipsburg, N. J. The May issue included in a varied list of articles, "Methods for the Analysis of Petroleum Oil Emulsions."

Barnsdall Tripoli, 2111 Railway Exchange Bldg., St. Louis. A 16 page booklet describing Barnsdall Admix (meta-colloidal tripoli silica) and its use in increasing the workability and waterproofing properties for concrete, mortar and stucco.

Climax Molybdenum, 295 Madison Ave., N. Y. City. A survey of the industrial uses for molybdenum together with important technical data.

B. F. Goodrich, Akron, Ohio. A splendidly illustrated booklet describing the manufacture of various types of rubber for different uses.

Spencer Kellogg, Buffalo. "Does the Importation of Philippine Cocoanut Oil Injure the American Farmer." A summary of the economic side of the Philippine independence question.

Mallinckrodt Chemical, St. Louis, Mo. May price list.

Philadelphia Quartz, Philadelphia. May issue of P's & Q's is devoted to a discussion of the relationship of water in varying percentages in silicates.

Rossville Alcohol, Lawrenceburg, Ind. The April number of Rossville Alcohol Talks deals with perfumery and chemistry.

Pfaltz & Bauer, 300 Pearl St., N. Y. City. A new 50 page booklet describing the Riedel-deHaen line of analytical reagents and special methods for testing uniformity and purity.

Roessler & Hasslacher Chemical, Empire State Bldg., N. Y. City. "Fumigation of Flour Mills by Means of Cyanegg" is a new 30-page booklet showing in detail method of application of hydrocyanic acid gas for eliminating the flour weevil.

U. S. Government, Tariff Commission, Washington. Report 42, second series, deals with the report on dead or creosote oil.

Vanadium Corp. of America, 120 Broadway, N. Y. City. April issue of "Vancoram Review" features a discussion of a new automotive steel and a review of vanadium in photography.

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Dinitrochlorbenzene
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Dinitrotoluene—Oily
Diphenylmethane
Ditolylmethane
Ethylbenzylaniline
Ethylbenzylaniline Sulphonic Acid
Fumaric Acid
G-Salt
Gamma Acid
H-Acid
J-Acid
Laurents Acid
L-Acid
Malic Acid
Maleic (Toxilic) Acid
Metanilic Acid
Myrbane Oil
Neville-Winthers Acid (1:4 Oxy Acid)
Nitro Amino Phenol (4:2:1)
Nitrobenzene
Nitrosophenol (Para)
Ortho Anisidine
Ortho Chlor Benzaldehyde
Ortho Nitro Anisole
Ortho Nitro Toluene
Ortho Toluidine
Para Amino Phenol
Para Amino Acetanilide
Para Nitro Toluene
Para Nitroso Dimethylaniline
Para Toluidine
Peri Acid
Phenyl J Acid
Phenyl Peri Acid
Phthalic Anhydride
Quinizarine
R-Salt
S-Acid
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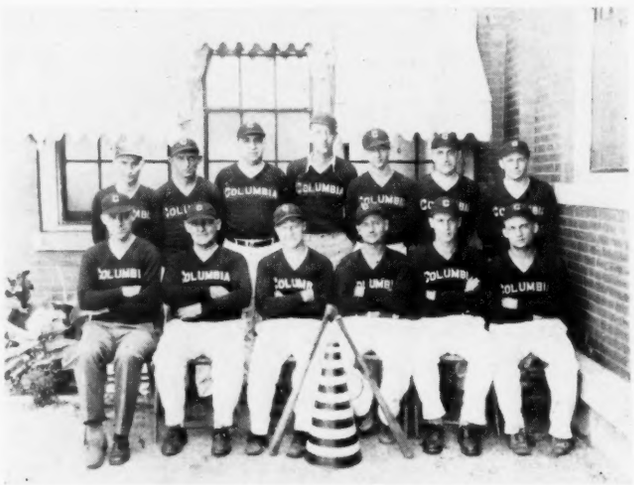
INTERMEDIATES

CHEMICAL N

The Photographic Record of O

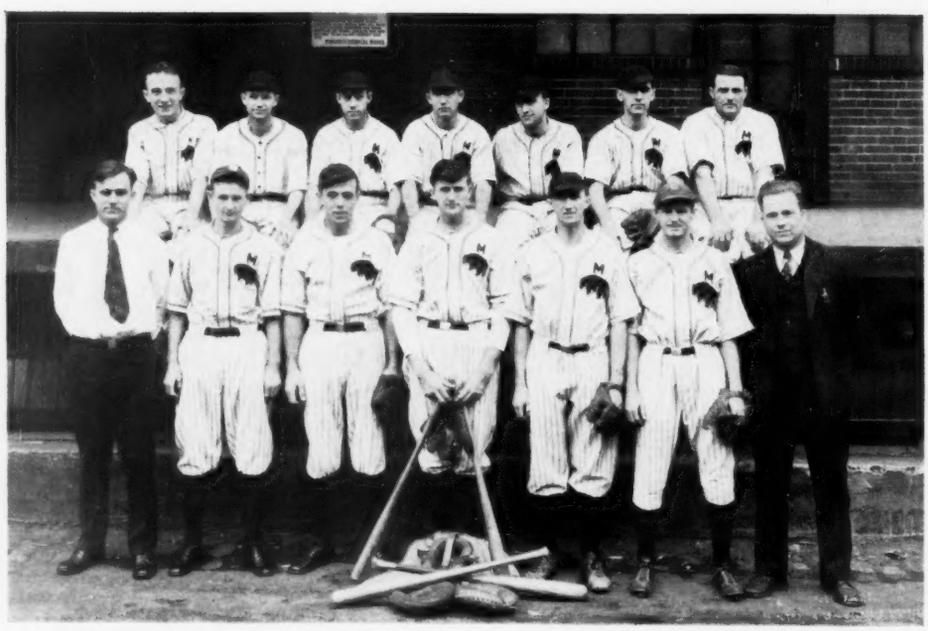
Giants, White Sox, Cardinals, and Athletics? No, not quite—but four of the leading baseball teams of the chemical industry. And how about a chemical baseball league? Imagine Dow and Monsanto crossing bats at Sportsman Park for the chemical baseball championship—how the pop bottles would fly in the sections reserved for their respective sales forces!

The Dow Baseball Team holds an especially good record, winning 31 games out of 34 played for an average of .912 and played all Class A games but 4. Members of the team are—Pete Brown, Catcher and Field Mgr.; Leo Prill, Don Streater, Don Hall, L. Fersdorph, Pitchers; R. W. Kent, Pitcher and Mgr.; Ed. Shaw, 3rd Base; F. Sirrine, 2nd Base; A. Asadonian, Utility Fielder; H. Baldwin, L. Du Lude, S. Supinger, Fielders; R. Barringer, L. F. and Catcher; M. Martin, 1st Base; E. Dietz, Short Stop



The Annual playground ball season of the Industrial League of Barberton, Ohio under the auspices of the Y. M. C. A. was very successful. Eight teams competed for the championship which was won by Columbia Alkali with 12 wins and 2 defeats. In the play-off with the winners of the City and Church leagues for the City Championship Columbia was the successful contender and declared the City Champions. Standing: Matuch, Woodruff, Bringard, Milford, Kaiser, Muzik, Smith, Capt. Front Row: Wadsworth, Fassnacht, Mgr., Platt, Kaiser, Ghlormley, Immler

The Du Pont Baseball Team of Old Hickory, Tenn. has been a member of the Nashville Amateur Baseball Association for six years and for four years won the League and City Series. During the year of 1931 they played 35 games and lost but 6. The top row from left to right shows: Hugh Goodman, 2nd; Willie Rice, 1st; Ben Frakes, P.; Gordon Pugh, O. F.; Floyd Smartt, Manager; Tom Rogers, P.; Hutcheson, C.; and in the front row: left to right: Joe Deason, P.; Johnny Gray, O. F.; L. P. Majors, P.; Earl Midgett, 3rd; Chin Johnson, O. F.; Cecil Evans, O. F.; Carl Evans, S. S.; and Ralph Barnes, Mascot



This team is a member of the Mid-City Municipal League and their season opened officially on the last Sunday in April. A squad of 25 men are out for the team. This group, from left to right, includes: Top row—Winkler, Leverett, Jackson, Aubuchon, Bouril, Carter (Secretary and Treasurer) and Main. Bottom row—Bayless (Manager), Decker, Tucker, O'Neal, Narry, Luckett (Captain), and McGraw. The President of the club is Fred Allen and "Doc" Stokes is President of the Boosters Association. Fred Allen has been elected Vice-President of the Mid-City League. Monsanto is well represented in all seasonable sports also boasting a basketball team in their Illinois plant

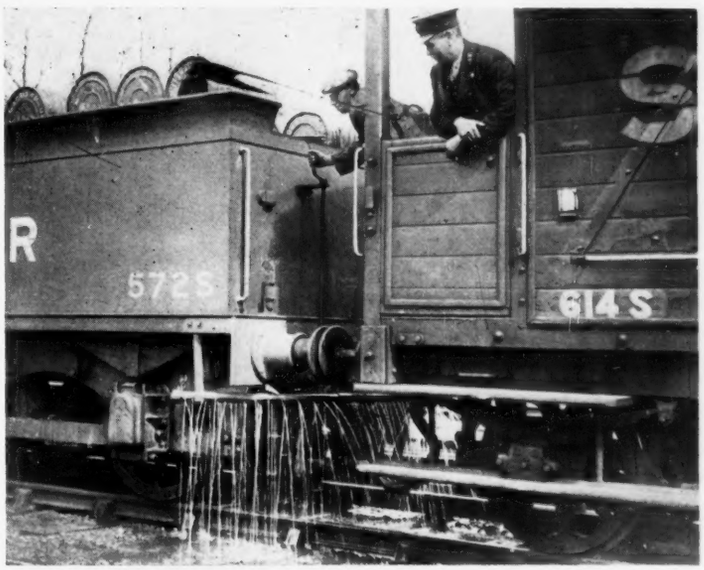
L NEWS REEL

rd of Our Chemical Activities

Still another phase of chemical industry's recreation hours and probably the only team of its kind in the industry. The Roessler and Hasslacher Rifle Club pause for a few moments from their practice to be photographed. Standing, left to right: T. E. Thompson, W. Yarnold, D. Nantz, H. Horst, R. Hare, W. Shannon, S. Landry, O. Smith. Sitting, left to right: O. B. Hodges, C. Montgomery, R. Conkling, A. Lane, D. Reis, P. Hunger

Courtesy *India Rubber World*

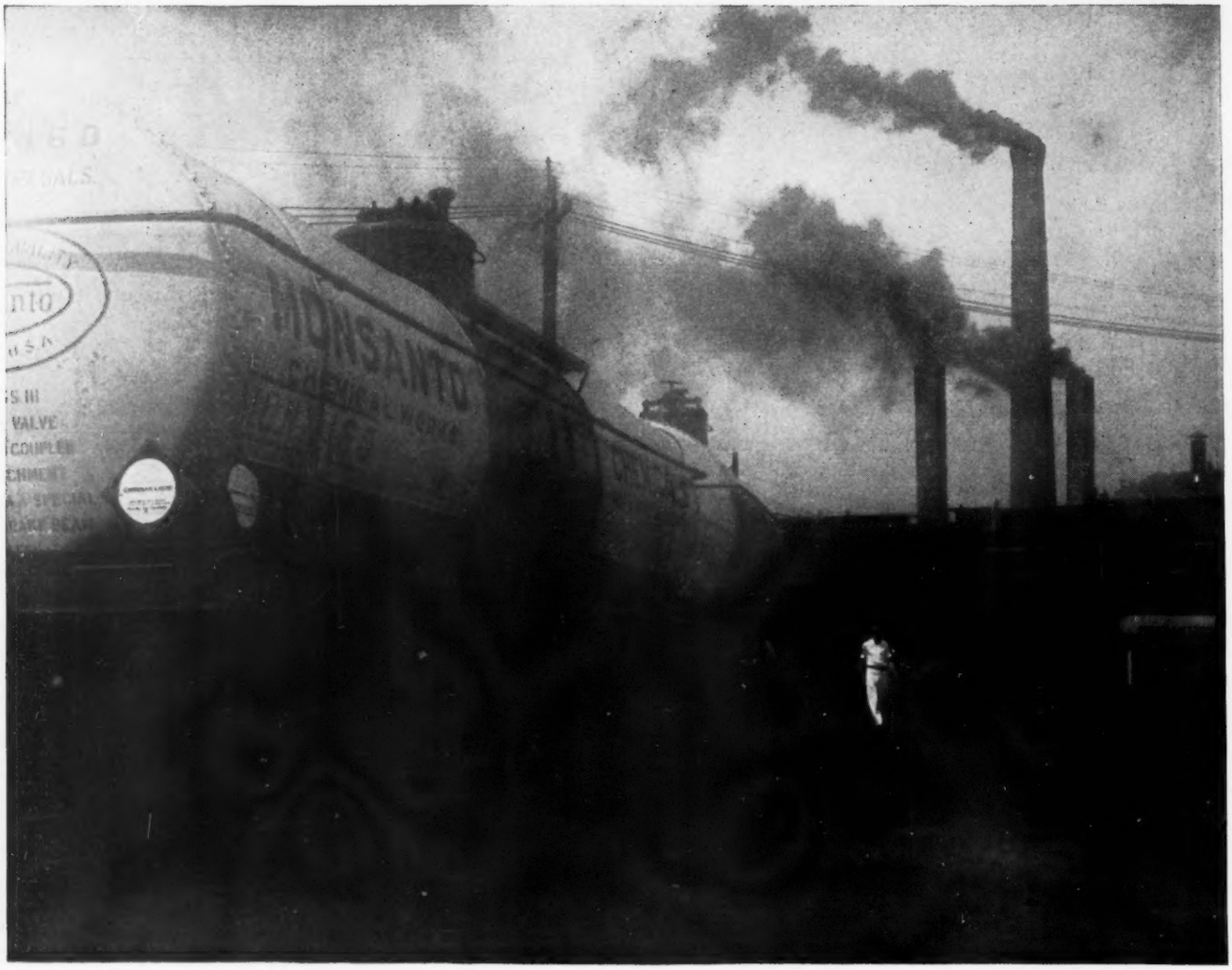
Cincinnati Rubber Mfg. Co., Cincinnati, shipped what is believed to be the largest conveyer belt ever built in single length, shown in the accompanying illustration. The belt weighed 14 tons, measured 1615 feet long, and was coiled in 2 rolls, each 8-1/3 feet in diameter. It is an 8-ply construction, 42 inches wide, of 42-ounce duck with 3/16-inch top cover, including breaker strip, and 1/16-inch bottom cover, making an overall thickness of 13/16-inch



English railway companies now employ weed-killing trains equipped with a special apparatus with which to spray the weeds that come within the path of the trains. The spray has a radius of ten feet and the liquid used is sodium chlorate. This has been found to be most effective in combating this nuisance to railroad operation

Keystone

Mr. Francis P. Garvan presenting the medal of the American Institute of Chemists to Dr. Charles H. Herty at the Chemists' Club, New York, on May 7. Left to right: Henry G. Knight, President of the American Institute of Chemists; Francis P. Garvan, President of the Chemical Foundation; former Senator Joseph E. Ransdell of Louisiana; Marston T. Bogert, Professor of organic chemistry at Columbia; Charles H. Herty; Frederick E. Breithut, retiring President of the American Institute of Chemists; Howard S. Neiman, Secretary of the Institute; Howard W. Jessup



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Monsanto CHEMICALS OF QUALITY Monsanto ST. LOUIS, U.S.A. **Chemicals**

Tomorrow's Problems for Our Chemical Executives

NEVER was future planning so difficult---yet never was so much at stake. Therefore, the forward-looking discussions at the joint meeting of the Manufacturing Chemists' and the Synthetic Organic associations ought to be studied and thoroughly understood by every man in the chemical industry. Accordingly, we print on the following pages, the principal papers read at Absecon, June 2nd.

As Mr. Du Pont points out, the future lies in the hands of wise management, and management includes every department head and branch manager, every salesman and every chemist, who must all contribute to the solving of the grave, common problems.

Obviously, the industry must economize; its efforts in the common cause must be more direct and efficient than ever. It is more than timely---it is even essential, therefore, that calm, sympathetic, disinterested consideration be given to Mr. Allen's suggestion to centralize the chemical public service organizations.

What Congress does will as never before affect not only the prosperity of the country, but the very fate of chemical manufacturing in America. Mr. Belknap's report on the Monsanto plan of informing employees on how Congress votes on business measures (samples of this plan are shown on page 531) and Mr. Derby's brutally frank discussion of the chemical tariff are of lively interest to every man connected with chemical industry.

For a searching study of the fundamentals of our tangled political-economic problems, from an expert and disinterested point of view, we commend to you Dr. Adams' outspoken message. As few men dare to do, he faces the possibilities of defeat in the financial crisis of the coming summer, and yet, without silly optimism, shows the rewards that will come to sound business under brave leadership.

What Our Industry Faces

By Lammot duPont

President, Manufacturing Chemists' Association

THIS is the Sixtieth Annual Meeting of the Manufacturing Chemists' Association, and the Association is to be congratulated upon the event; for, in the history of trade or industrial associations it is rare that one is existing for such a period of years.

In welcoming you at this meeting it will be perhaps appropriate for me to summarize briefly the work of the past year and perhaps indicate the line which our efforts should take during the current or the coming year, but these matters will be covered in a manner much more able than I can do by those who will speak afterward. I shall therefore confine my remarks, and I promise they will be brief, to that subject which is perhaps most in the public mind today and which is of tremendous interest to our Association and its members. I refer to the current business depression, which has had its effect on perhaps all of us and in many quarters has struck fatal blows, and in almost every quarter has already done such damage as will never be entirely repaired. What is the cause of it? Frankly, I do not know. How long will it last? Again, I must frankly admit that I do not know. How shall we ever get out of it? Again, I can give you no answer.

This is not the first time we have passed through a difficulty of this kind, although it has already become more severe than any in my lifetime and perhaps more severe than any in history. We should be able to learn something from the history of previous cases, even though those previous cases were comparatively mild. As far as I know, no one has ever been able to state what caused any of these depressions or what cured them. This indicates to me that these causes are too complicated and too deep to be understood by men with our present woeful lack of information on economic subjects.

It seems to me certain that the real cause must lie in something which can be described as "mass action." No individual or small group, and by a small group I mean a few thousands of people, can cause an economic depression whatever they may do. It takes literally millions of people to bring about an upheaval of this kind, and for the same reason it will require millions of people to get us out of it.

Now, we have all the raw material, the productive capacity, the means of distribution and the consumptive power of goods to make the wheels of industry hum, but they not only do not hum, but seem to be slowing down. What we seem to lack is "management." I mean management in its broad sense. We need the people who can visualize the production and foresee the demands of an article, create a plan, put it into effect and assume the responsibility for the risk of failure. The fact that we need this kind of men, and we need millions of them, is just another way of saying that you and I and all the other millions of men have "cold feet." We each in our own line know how to formulate these plans and put them into effect, and ordinarily have the courage to assume the risk, but today we do not.

If this line of thought is correct, we should each take upon ourselves the duty of doing our own work thoroughly and soundly, not attempting to tell someone else or suggest to someone else how they should do their work. We should let our bankers do our banking and in a constructive manner, our miners operate the mines, our railroad men carry the goods, and we manufacturers produce and sell what we know best how to do, incidentally "keeping off the grass" of the man who is already producing, selling and distributing in a reasonably efficient manner.

From this suggestion you might infer that we might well leave our Government to those in whose hands the Government now lies. That is another matter; for Government is not a competitive business. We are all in it and we should all take a hand. You know what I mean by that. We should go out and vote at the right time, and only for those whom we have reason to believe will use intelligence, effort and balanced judgment in conducting our Governmental affairs.

I would like to touch upon some Governmental matters, but our time is too short and I am sure I would weary you if I merely confined myself to the subject of Governmental expenditures. May I venture, however, one sentence on that subject: GOVERNMENTAL EXPENDITURES MUST BE REDUCED!

One Chemical Institute

By E. M. Allen

President, Mathieson Alkali Works

Mr. Allen at the meeting of the Manufacturing Chemists' Association made the following plea for the consolidation of the multitude of associations, societies and institutes which the companies of the chemical industries must support to the

time of the tidy sum of over a half a million dollars a year. In such times when economy is more than a watchword; this is a potent argument, to say nothing of the other advantages of concentrated unified effort which he points out.

THE economic crisis that we are all face to face with today presents problems so serious that careful consideration must be given to every economy measure possible towards improving the whole situation.

We cannot alone correct the whole economic situation. But we can contribute by doing all we can in the chemical industry, and I am sure that the brains, energy and resourcefulness of the chemical industry of this country is going to do its best towards working our way out of the position that we find ourselves in today.

Extravagant growths that have crept into every industry and every organization during the period from the war period to 1930, have been receiving the most serious attention from every one of us, and included in these items are the cost of trade associations and institutes organized for the good of each one in every industry.

Our particular efforts are naturally in the chemical and related industries, and there is hardly a company in any chemical business, that is not a member of one or more chemical associations or institutes. I firmly believe, that if a plan could be considered by the entire chemical industry, that would give us a large parent organization, say called the "Chemical Institute" with the different divisions to carry on the work now being done by their present organizations, that a great saving could be made and materially greater benefits could be gotten out of every dollar spent on organization work.

This subject is one that we have been discussing for the last two or three years, but on account of the present continued depression, and because we are compelled to exercise every possible economy, and take aggressive steps looking toward the elimination of duplication and unproductive efforts, I have reached the conclusion, that the aggregate cost of running and maintaining all of these organizations is not only excessive, but in many cases the expense of separate associations is not justified. The consolidation of efforts is inevitable in the interest of economy and efficiency.

While it is probably true that we can postpone this development, the economic demands of the times can only result in certain of these organizations ceasing to exist (due to the very high cost of their maintenance) with consequent loss of some of the valuable service

rendered, unless we take deliberate steps, leading towards a definite program on the lines suggested.

A survey made of the different chemical associations shows that it is costing the chemical industry to run the above mentioned associations and institutes over $500,000 per year.

Suggested Economies

One definite economy in the consolidation of separate organizations would be a reduction of staff, office and overhead expenses. Yet there is no reason why the efficiency of these organizations cannot be maintained and improved under the organization of the "Chemical Institute," if properly organized and with proper divisions or sections, to care for each significant, specialized branch of the industry.

In my association with the Manufacturing Chemists' Association and other chemical organizations, I am firmly convinced that there are certain problems which the various separate chemical associations have failed to grasp in their prospective, that is the relation of the chemical industry to the public and the big problems that we face in the deluge of hampering and regulatory legislation, as well as the potential force of such an organization in national affairs.

The Manufacturing Chemists' Association has started on this plan during the past year, by the absorption of the Agricultural Insecticide & Fungicide Association, followed by the appointment of a special committee last winter, to deal with the exclusive problems of the "insecticide and fungicide industry."

There are many serious things to consider in such a plan. There are many things to be said for and against the plan. But my object is to present this plan to the chemical industry of the country and its different associations, to see whether it is to be seriously considered or not. We are all busy with our own problems, but I do not believe one chemical manufacturer in the country today, if he is serious, can doubt the advantages of such an organization far out-weighing the disadvantages.

A plan for consideration by a properly appointed Committee, could be the following:

(a) Organize an "American Chemical Institute."

(b) Institute to have a Board of Directors, President, Treasurer, and a paid General Secretary. President to preside at all Board meetings.

(c) An Executive Committee to be elected from the membership of Board of Directors, having its own Chairman.

(d) Have different divisions of the Institute that would function virtually the same as present separate associations or institutes.

(e) Under the General Secretary, have each Division's details handled by a paid Secretary of that division, and probably two or more divisions could be handled by the same Secretary.

(f) Each Division of the Institute, to have its "Managing Committee," who would elect its own Chairman.

(g) The dues of each Division, to be determined by its Managing Committee, with an added amount to carry the overhead of the Institute.

(h) The Institute to have offices in Washington and New York.

I present this plan to you for consideration, and trust it will be followed up by the M. C. A. in having a Committee appointed to discuss the subject with other chemical associations and institutes, to determine what is the desire of the majority of the chemical industry of this country.

Foreign News

Additional information on the new British Tariff Act, effective April 25th, reached this country during the month. The new act supplants the Abnormal Import Duties which was merely a stopgap, and is in effect for a period of at least 12 months. In that period the Tariff Committee is instructed to undertake a more detailed study of rates and to suggest a tariff based on more scientific data than was available in short period in which the present rates were adopted. In the April 30th issue of *The Chemical Age* (London) appeared a list of the chemicals and chemical products effected by the change in rates and it is reproduced.

	Additional Duty recommended Per cen		*Additional duty plus Genl. Ad. val. Duty Per cent*
Tartaric acid	10	...	20
Cream of tartar	10	...	20
Citric acid	10	...	20
Ammonia, soda and potash alum	10	...	20
Alumnium sulfate	10	...	20
Ammonium chloride	10	...	20
Lithopone	10	...	20
Acetone	23 1/3	...	33 1/3
Acetic acid	23 1/3	...	33 1/3
Vinegar	23 1/3	...	33 1/3
Acetate of lime	23 1/3	...	33 1/3
Formaldehyde	23 1/3	...	33 1/3
Menthol (other than natural menthol)	23 1/3	...	33 1/3
Boric acid (refined)	10	...	20
Borax (refined)	10	...	20
Nitric acid	10	...	20
Aluminium oxide (hydrated or anhydrous) but not including abrasives	10	...	20
Anhydrous ammonia	10	...	20
Ammonia liquor	10	...	20
Sulfate of ammonia	10	...	20
Nitrate of ammonia	10	...	20
Sodium nitrate	10	...	20
Calcium chloride	10	...	20
Collodion cotton (nitro-cellulose)	10	...	20
Tin oxide	10	...	20
Zinc oxide	10	...	20
Nicotine, nicotine sulfate and nicotine insecticides	10	...	20
Paints and colours prepared and manufactured (including ready-mixed or in paste form, but not including printer's ink, varnishes, lacquers, enamels and dyestuffs)	10	...	20

Italian Cyanamid Production Enlarged

New Cyanamide plant is opened in Italy belonging to the "Terni" company at Papigno. It is reported to contain the most modern equipment for the manufacture of calcium carbide and cyanamide. The capacity is far in excess of the present Italian demand, but the promoters anticipate that Italian consumption of nitrogenous fertilizers must increase with the development in growth of Italian agriculture. Cyanamide production of the Terni company amounted in 1931 to 46,762 metric tons as compared with 65,183 in the preceding year. Calcium carbide sales were 10,070 tons and 11,500 tons respectively. It is planned to limit production of ammonium sulfate at the Terni's Nera Montoro plant to 28,000 metric tons annually.

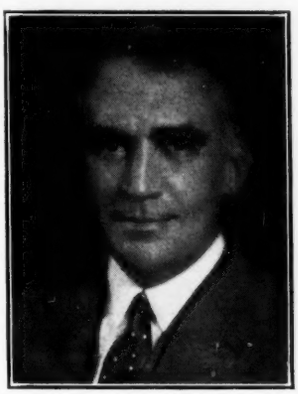
Spanish regulatory office for the production, manufacture and sale of potash has fixed the minimum production for 1932 at 50,000 tons potassium chloride, 80-84 per cent.

Congress and Consolidation:

Today and Tomorrow

By Charles Belknap

President, Merrimac Chemical Co.



WE HAVE been going through troublesome times and as yet the way out is not defined. Grave concern is being expressed in personal contacts in the press and in Congress. Generally speaking the public is more aroused over the situation than ever before. Disgust with the actions of both branches of Congress is widespread. Monsanto and its subsidiaries has been utilizing every endeavor to arouse and educate the voter who is in any way connected with Monsanto organizations, by statements of facts enclosed in the dividend, salary and weekly pay envelopes. If there are any envelopes today which received careful consideration, they are the above. It has been interesting to see the almost unanimous support of the entire personnel as shown by the letters which were written to Congressmen and Senators. It is proposed to continue this method during the present session of Congress, during the coming campaign for election, and I trust it will never fall into disuse. Some of the replies received from members of Congress were most interesting, others quite the opposite. I should like to quote from one or two. Congressman Underhill of Massachusetts, writes as follows:

> "The trouble with the average business man is that he never takes an active interest in politics, many even failing to vote, but when his pocket book is affected he jumps up and wants to kill off everyone, friend or foe alike. It is about time that men like yourself, and the suggestion is made in a friendly way, got busy and worked actively to the extent of pulling doorbells in order to insure the election of right thinking and economically sound public officials. Do not be content to let your neighbor do it for you, for that is the trouble with our country today."

From a citizen of Massachusetts came the following in reference to a request to write to members of Congress:

> "I have written. But what oppresses me is the apprehension that this outlet to feelings is being suffered to take the place of clear thinking along lines of more heroic measures, which alone are of any avail, and are lulling us into a state of self-satisfaction and of spurious indignation at Congress. To my mind, never was Congress a more faithful representative of public feeling and capacity. The same differences of opinion distractions and impotencies that afflict our halls of legislation exist in every electorate of the United States . . . I am of those who think that a nation gets in the long run just the quality of government that it deserves, whether it be Rome or Russia. The intelligence and integrity of the people, or lack of these qualities, will be surely reflected in its law makers. I am afraid that the present state of the United States Congress all too accurately reflects the mental and moral condition of the people, and I look for permanent improvement only in change in national spirit."

The foregoing are indicative of those contacted who have given much thought to the present situation, and I believe have focused their attentions on the fundamental causes of the present situation.

Recently I read a letter written by Lord Macaulay to the Honorable H. S. Randall of New York in May 1857, which has much bearing on the present situation, and is full of interest. He writes in part as follows:

"The time will come when New England will be as thickly peopled as Old England. Then your institutions will be fairly brought to the test . . . It is quite plain that your government will never be able to restrain a distressed and discontented majority.

"I seriously apprehend that you will, in some such season of adversity do things which will prevent prosperity from returning; that you will act like people in a year of scarcity, devour all the seed corn, and thus make the next year a year not of scarcity but of absolute failure. There will be, I fear, a spoliation. The spoliation will increase distress. This distress will produce fresh spoliation. There is nothing to stay you. As I said before, when society has entered on this downward progress either civilization or liberty must perish. Either some Caesar or Napoleon will seize the reins of government with a strong hand, or your Republic will be as fearfully plundered and laid waste by barbarians in the twentieth century as the Roman empire was in the fifth; with this difference, that the Huns and Vandals who ravaged the Roman empire came from without, and that your Huns and Vandals will have engendered within your Country by your own institutions."

It is interesting to see how accurately Lord Macauley predicted the spoliation. Certainly spoliation is rampant in all of our local, state and federal governments. I do not think for a moment that this country is going to hell in a hack, but it certainly is most evident that its present hack has been turned into a jitney bus, many of whose passengers pay no fare.

"United We Stand"

When I heard that I was to speak on "The 1933 Program of the M. C. A.," and Mr. Allen was assigned "Consolidation of Chemical Efforts," I felt very strongly that owing to the present situation in the chemical industry in particular, and industry in general, that the two subjects were synonymous. I wrote to Mr. Allen and told him that I felt that such was the case, and then I wrote to several executives in the chemical industry with the view of presenting to you a cross section "1933 Program of the M. C. A." I was not successful in this attempt for nearly all replied that it was their thought that "Consolidation of Chemical Efforts" was the most important item of accomplishment for 1933. In this I agree on the basis of: (1) economy; (2) greater efficiency; (3) better service to the industry; (4) greater effectiveness in presenting the voice of the chemical industry as a whole wherever and whenever deemed desirable; (5) more closely knitting the industry together so that there is better understanding of the problems common to all, thereby eliminating much duplication of effort, diversification of opinions and disastrous misunderstandings.

I think the fight ahead of us to overthrow this depression and reconstruct prosperity demands that there shall be consolidation of effort and greater interest in local, state and national affairs by every one individually and by all associations or institutes connected with industry.

There are many problems coming up in the immediate future, which will demand time and effort of this industry, some of which are: (1) tariff; (2) pending state laws on workmen's liability compensation; (3) pending state laws on unemployment insurance; (4) hampering and unnecessary regulatory state and federal laws; (5) closer cooperation with labor; (6) Congressional activities unknown and unexpected but certain to have effect upon industry.

Aside from "Consolidation of Chemical Effort", it would seem wise for the M. C. A. to adopt a program for 1933 which through greater service to its members, will increase the interest of its members in the Association so that, as your President has put it:

"In these troubled times, the Manufacturing Chemists' Association should attempt to represent its membership in a dignified and fair manner—not pressing for advantages which are unfair or detrimental to the country as a whole, but standing up for their rights if they seem to be imposed upon. Perhaps that would be a better key-note for the coming year; namely, trying to do their share in the work of reconstructing prosperity."

Equipment Bulletins

Wm. Hiergesell & Sons, 295 Pearl St., N. Y. City. Catalog 200 describes the Herco line of hydrometers and thermometers.

International Nickel Co., 67 Wall St., N. Y. City. A leaflet describing monel metal utensils available for the chemical, food and textile industries.

Linde Air Products, 30 42 St., N. Y. City. "Oxy-Acetylene Tips" for May contains a particularly valuable article on controlling expansion and contraction in welding operations.

Oliver United Filters, 33 W. 42 St., N. Y. City. A new folder describing the Olivite pump specially designed for work in the manufacture of sulfuric, muriatic, and phosphoric acids and metallic salts of these acids.

Quigley Co., 56 W. 45 St., N. Y. City. A new 24 page booklet describing the many applications of "Chromix," a chrome plastic fire brick, in furnace construction and the advantages particularly where very high temperatures and other difficult problems are met with.

Surface Combustion, Toledo, Ohio. An eight page leaflet giving the operating story of the Eutectrol process of continuous gas carburizing.

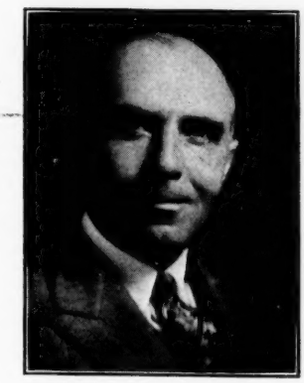
Taber Pump Co., Buffalo. A four page leaflet describing the Taber Double Suction Centrifugal pumps in capacities up to and including 1,500 g.p.m.

U. S. Bottlers Machinery, 4015 N. Rockwell St., Chicago. A very complete booklet, profusely illustrated showing the complete U. S. line of washers and dryers, filling machines, filtering equipment, conveying systems and storage and mixing tanks.

Chemicals and Tariffs

By Harry L. Derby

Vice President, American Cyanamid Co.



Chemicals can be delivered at Hoboken from the Ruhr more cheaply than from Rochester, N. Y. This sober fact gives an inkling of the need of tariff protection, unless we want again to be dependent upon foreign sources of chemical supply.

BEGINNING with George Washington's term as President, down through the years to the present administration, industry has been protected in the United States by a tariff,—excepting in the terms of two Presidents. No one will deny that our progress in this country has been steadily forward, and no well-informed person will deny that the Tariff has contributed greatly to this progress.

Our present tariff law was drawn on the theory that it equalizes the difference in the cost of production in foreign countries and at home, taking into account elements of expense in delivering articles to the principal domestic market. Such a tariff cannot be regarded as an embargo against foreign countries,—our international bankers to the contrary, notwithstanding. As a matter of fact, 70 per cent of our imports enter the country DUTY FREE and if there is any article in the 6,000 odd items that is incorrectly assessed a remedy lies in the so-called "Flexible Section" of the administrative part of the Act, which permits re-adjustment of such duty to the extent of 50 per cent upward or downward. Since the "Hawley-Smoot Act" became a law there have been 164 applications for change received by the Tariff Commission. Ninety-one of these were ordered investigated, including 16 ordered by the Senate. Forty-five were denied or dismissed. Twelve were withdrawn. There are still 36 cases pending. Report on 10 appplications have been sent to the Senate, and 39 reports have gone to the President for his approval. Of these 39, the rating on eight commodities were advanced and on 16 the ratings were reduced. In 15 cases no change was ordered.

A general attack, as has been carried on by various political leaders, on the whole 6,000 items is therefore rather inconsistent. Repeatedly have challenges been issued by tariff supporters to those in opposition to name a list of articles that are assessed with excessive duties, and those challenges have never been answered.

No other industry, more than ours, needs protection against ruinous foreign competition. The history of the chemical industry, with which you gentlemen are so familiar, indicates beyond any question of doubt the inability of our industry to exist without this protection. At the beginning of the World War America was startled to find that the very basic products of defense were not made in this country, or were made in such inadequate quantities as to be of little value. Our distinguished President, at that time, Mr. Woodrow Wilson, made the vigorous statement that never again should America permit the chemical industry—this important arm of defense—to be without proper support and encouragement in the development that should and would take place. The growth of the chemical industry since that time has been tremendous—in 1913 the Capital investment was less than $2,000,000,000 and today it is in excess of $5,500,000,000. More than one million men are normally engaged in the industry and, operating at a normal rate of production, more than four million freight cars are needed for the transportation of raw materials and finished products of the industry. These figures are for those (if any) who enjoy statistics. That growth would have been impossible without tariff protection.

With the cheap foreign labor and transportation costs from the Ruhr to Hoboken—lower than from Harrisburg, Pa. and Rochester, N. Y. to the same destination—this development in our industry would not have occurred.

Numerous uninformed individuals attack the high rates in the present Act, but Representative Treadway of Massachusetts recently made the statement on the floor of the House of Representatives that Schedule No. 1 in the present Act, based on 1928 Imports contained average rates of 31.4% against 29.22% in the 1922 Act, and that if you excluded the so-called "agricultural chemicals" from the present Law that

the rates on other chemical products are actually lower at present than they were under the 1922 Law. Mr. Treadway also pointed out that the Present Law increased only 47 items under the old schedule, and decreased 66 items. The 1930 Law transferred 26 items from the Dutiable to the Free List, and only 14 items from the Free List to the Dutiable List, so it will be seen that the present tariff law was not drawn with an idea of improving the position of the chemical industry over that enjoyed in the prior Law.

Debts or Prosperity?

Foreign interests are very actively engaged in propaganda to either make ineffective or destroy the tariff protection to American industry, and the chemical industry is logically one that will find itself assailed. It hardly seems conceivable that the nation would endanger its defense in these times, nevertheless, there will be arguments which would to the uninformed sound plausible and which will be stressed and propounded with the one thought in mind that if a change in the Congress takes place in November, a new tariff bill can be put through which will be satisfactory to the foreign producers and to some international bankers. We are told that unless we reduce our tariff rates and allow the foreign manufacturers to sell their goods in this market that we will never collect the Foreign Debts. Personally, I had rather postpone those debts 100 years than to reduce our tariff schedules and permit a flood of foreign goods into this market, further increasing unemployment and bringing disaster to industry, agriculture and labor.

Facts on Foreign Trade

It has been said that our foreign trade of 1929 which amounted to $5,240,000,000, in exports and $4,309,000,000 of imports was seriously affected by reason of the Tariff passed in 1930, and the figures of 1931—$2,424,000,000 in exports and about $2,000,000,000 in imports are given to substantiate this contention. If, however, one is to subtract imports of 1931 of $2,000,000,000 from the imports of 1929 of $4,309,000,000 we find that this $2,400,000,000 added to our exports in 1931 of $2,424,000,000 equals a figure of $4,800,000,000 which is only $400,000,000 less than the total exports of 1929. My point is this, the decrease in imports has I believe been made up, to a great extent, by the substitution of domestic production for foreign imports and, as a matter of fact, there is no country in the world in as good a position to isolate itself, so far as international trade is concerned, as is the United States.

I do not believe that foreign countries are putting up tariff walls in retaliation for any other country's tariff walls. I believe these countries are putting up tariff barriers to protect their domestic industries and encourage as far as possible their domestic industrial and agricultural activity, and I firmly believe that the waste of unnecessary transportation to and from the different countries can be avoided by more domestic business and less international business As to our own tariff situation, Garrett Garrett in a recent tariff article in the Saturday Evening Post very tritely writes "to say that tariff barriers have ruined trade is like saying fever is the cause of disease."

Unprofitable Exports

As a matter of fact, the export business of the United States has been the least profitable and the most expensive of any class of business we have enjoyed, and while I am in sympathy with foreign trade, I want to see that foreign trade a logical trade and trade that does not operate to the disadvantage of the United States. I do not believe we should attempt to sell sheep to Australia, nor lumber to Canada, but I do believe that we should sell to foreign countries such products as we produce better or cheaper, and I believe we should purchase from foreign countries those products that can be best grown and produced in those countries, and I maintain that our tariff law, as at present on the statute books, was intended to provide for this very thing. Raw materials which we purchase abroad come in Duty Free and many finished products inadequately produced here are subject to no duty. I do not believe in excessive tariff schedules, and I see no reason for enacting a high tariff on bananas to force the consumption of oranges.

England's Free Trade Myth

You have read that England, for the first time in history, has abandoned free trade and erected a tariff barrier. During the last ten years England has averaged in the collection of tariff duties $562,000,000 per annum. The U. S. average over the same period was $570,000,000 per annum. England's population is less than 40 millions. Ours over 120 millions.

If we could always keep in mind that in the final analysis labor is the chief item of every finished product and that we are actually selling our country's labor in the form of produce and manufactured products, it might aid us in the realization that, if taken from the ground to the finished product, labor in most instances represents more than 90% of the cost of the product. Standards of labor in this country are higher than in any other country, and I, for one, do not want those standards reduced to those of the foreign countries.

The State owned cyanamide works at Piesteritz in Central Germany, which discontinued production in November, 1931, because of excess stocks, has reported that inventory has been reduced to 1,300 tons. Production is about to be resumed with three carbide furnaces to be placed in operation.

An Economist's Message to Chemical Executives

By T. S. Adams, Ph. D.

Professor Political Economy, Yale University

I HAVE been in the past a devout believer in the philosophy that a man's first duty is to his family and his immediate neighbors; that an enlightened self-interest is the beginning of sound citizenship. No scheme of government, Democratic, Soviet, Socialistic or Communistic, can adequately take care of people who will not take care of themselves.

I have not abandoned that belief. But it represents merely the beginning of wisdom, not the whole truth. And it is the remaining truth which is of significance at the present time. Millions of men and women who have been reasonably industrious and reasonably prudent are in deep want or anxiety, not because they have violated the canon of enlightened self-interest. If they suffer it is not because they have neglected their own or their family's affairs. If they have sinned at all, it is because they have neglected national and international affairs. Whatever part individual dereliction has played in causing present distress, an even larger part is due to faults of the economic and financial system of which we as individuals are organic parts. What are our duties and responsibilities as members of the intricate economic system whose well being so profoundly affects our individual welfare?

The mere statement of the question refutes, I think, one answer which is frequently given to the question. We cannot satisfy our obligations by merely minding our own business. In too many cases now we have no business to mind. In millions of cases our brothers are our keepers—whether we like it or not. We cannot, even if we would, merely "dig in," fortify our own individual position and, as regards the system, let nature take its course. Death, it should be remembered, is an inevitable part of nature's course and the system does not mean to die—not yet, at least. It will not take defeat lying down. We will act collectively, nationally, internationally, despite slender voices piping in the gale: "Let us alone; *laissez faire, laissez aller.*" Private business will not be left alone. Politics will not leave business alone; one business will not leave other businesses alone; business will not leave politics alone. Whether as a punishment for our sins, or as the birth pangs of a better day, I shall not undertake to decide. But one thing is plain. The policy of masterly inaction is not available. We cannot, in the financial world particularly, let nature take its course.

I am aware that I am talking platitudes. But it is often vitally important to choose between conflicting and competing platitudes. A wise choice between platitudes may mean the difference between profit and loss, between success and failure, between sickness and health.

The system then, as a system, must make crucial decisions. How can we help make those decisions wise?

The principal duty of the individual as an integral member of the body economic, financial and political, I think, is one of loyalty and obedience to the best leader he can find.

I do not know which is worse, a callous indifference to public affairs or a superficial and egotistical assumption on the part of the amateur that he has the sound solution of every perplexing public problem. Beware the man, in Stanley Hall's phrase, who thinks he has the absolute by the wool. Both the indifferent and the superficial unite in one conclusion and one slogan: "To hell with Congress." Their conclusion is as wrong as the basis of their conclusion is inadequate.

On the contrary, during the last six months, I have been impressed at Washington by the evidences of sound political leadership. The parties as parties, and the party leaders, have been admirable in their attitude towards the bonus bill, balancing the budget, and the bi-partisan tax program, including the sales tax. I have seen many evidences of real statesmanship and of political self-restraint. The delay, the vacillation, the confusion, are not due to partisanship. They are due to the absence of party control. The evils that we criticise are due to exaggerated individualism; to local and clique selfishness; to political

separatism; to the absence of team work; to reluctance on the part of individuals to subordinate their ends to larger programs; above all things, to log rolling.

"Follow the Leader"

On the whole we have had, in my judgment, wise party leadership from both sides. But we have had execrable party "followship." In Congress, as in the nation, we have lacked loyalty and an intelligent appreciation of the necessity of political team play. The supreme need is for subordination to leadership both from the average citizen and the average politician. The danger is not that a wild eyed Communistic government—or an inept and inexperienced Democratic government—or a hidebound and corrupt Republican government—will be placed in control. The supreme danger and menace is that we shall get no control from any government. We are churning around in a myriad of little groups, pushing restlessly hither and yon, on the verge of panic and stampede—like frightened cattle in a blizzard. We will agree neither to stand still nor move in any definite direction. The great menace, in Milton's metaphor, is Chaos and Old Night.

My conclusion that the principal duty of the average citizen is summed up in the intelligent choice and loyal support of a political leader rests largely on the supreme complexity and difficulty of the problems which confront our political leaders on both sides. Here again I shall be led into platitudes. However, they are platitudes which are frequently forgotten.

Our political representatives work under the pressure of a multitude of forces and interests which in number and conflicting diversity have no counterpart in the life of the average private citizen. The politician is damned if he does and damned if he does not. He is pulled and hauled and jostled by forces which he cannot possibly reconcile. He must please his newspaper critics, his constituency, his party, his church, and his conscience all at the same time. He is lectured, blamed and patronized, frequently by men who know much less than he. On financial and tax questions the average congressman, according to my experience, knows more than the average critic, although this critic frequently speaks of him with patronizing condescention. I am speaking of the average congressman and the average critic. There are exceptional experts who probably know more about finance than any Congressman. And there are negligible nitwits both in and out of Congress. In my own best judgment, however, based upon many years of experience, the ablest men in public life are, in the mixed field of politics, law, finance and economics, more to be trusted than their average critic. To be specific, I know of no group of men in private life to whom I would rather entrust public affairs in the financial field than, say, President Hoover, Secretary Mills, Senator Reed, from the Republican ranks, and Senator Glass, Senator Harrison, and Representative Crisp from the Democratic ranks. They might, in the aggregate, know less finance than six men that could be selected from private life, but they would in my opinion have a much better grasp of the mixed considerations of law, politics, business, economics and finance, which collectively constitute that field known as public finance. If the better political leaders are technically less accurate than the better leaders in private life, they are broader and far keener students of human nature in the mass.

Why is it that your eminent college professor or your brilliant newspaper editor or your great business man when he enters the political field, as not infrequently happens, does not immediately rise to the top and dominate the situation? The explanation is, I think, that he is not as good a statesman as those already in the field. Only when he himself becomes a seasoned politician is he fitted to lead. And usually he is the first to say so.

Who Knows This Answer ?

The foremost problems of the present day are, in legal phraseology, questions of first impression. The simple truth is that nobody knows the answer. We are dealing with new forces and new machinery. The present depression is not only more universal than any which preceded it, but our currency and banking mechanism is in reality so new that we have no adequate experience by which to judge with even approximate certainty what should be done in some of the situations which arise. Let me illustrate:

For months past, the Administration has pinned its hope of business revival largely upon the stimulating effects of large purchases of federal bonds by the federal reserve banks. Many eminent bankers and economists shared and endorsed this expectation. But there is no past experience which warrants a confident trust that open market operations and abundant potential credit will in any short period of time set the wheels of industry turning. Nor is there a convincing body of facts of the opposite tenor. A pale cast of doubt is thrown over all the relevant facts by the unique enormity of the existing depression.

It is amusing to note that in the May issue of Current History, J. M. Kenworthy, a member of the British House of Commons from 1919 to 1931 makes this confident statement:

> "It would be possible today for the Federal Reserve Banks to raise prices in the United States to the 1927 or 1929 level by buying securities in the open market to the extent of $200,000,000 or $300,000,000."

From February 24 to April 25, 1932, the Reserve Banks bought $450,000,000 of federal bonds ($306,000,000 in the three weeks ended April 27, 1932) with

little apparent effect upon the general security market and with practically no evidence of effect upon the general price level.

Hoover vs Smith

At the present time a thought-provoking debate is going on between the President and Secretary Mills on the one side and Al Smith and Speaker Garner on the other, as to whether certain projected loans shall be made by the government or by the government's Reconstruction Finance Corporation, and in particular whether they shall be confined to self-liquidating projects or not. And there is much talk back and forth about the reality of the distinctions between productive and non-productive works; between bonds which are the direct obligation of the Treasury, and R. F. C. debentures which are merely guaranteed by the Treasury; between loans which are and those which are not a charge on the public funds. I shall not attempt to take sides in this controversy beyond saying that the President's proposal seems much safer (from the standpoint of the Treasury and the public credit) than the Democratic proposals, although on the other hand it is possible that the Reconstruction Finance Corporation would not find a sufficient number of self-liquidating projects to start a ripple in the stagnant pool of industry and commerce.

But this is my point: economists have debated for more than a century over the reality of the distinction between productive and unproductive works. It would be too much to say that they have reached no useful conclusions in the matter. But it is true that they have reached no conclusion which affords an authoritative answer to the question in the present situation. There is no readymade answer from a century of past experience and discussion. The question as it now arises must be settled anew.

I am inclined to think that perhaps the most important factor of the present economic situation is the collective burden of outstanding debts private and public. In magnitude and universality the debt situation is essentially new, particularly in the volume of reparations and war debt contracted for purposes and under circumstances which created in the borrowers no new capacity to pay.

Too Elastic Credit

The same is true of the currency and banking situation. The federal reserve system went into effect only in 1913. Almost before it was well under way the World War forced us to strain that system to its uttermost powers. We quickly learned its expensive powers. We have not learned how to control it. The Goldsborough Bill passed by the House strikes me as naive and ill considered in its assumption that the Federal Reserve Board can so control the federal reserve system as to regulate the price level. Federal Reserve banking is in the same stage as television and lighter than air aeronautics. We know a lot about them, but there is as much that we do not know.

The people of the United States do not even suspect, and I do not believe that anybody entirely comprehends, the possibilities for good and for evil inherent in the intimate relationship between the government and the Federal Reserve Banks. I go further. Our whole banking system and its development have been based on the assumption that there is a supreme virtue in an elastic currency, i. e., a currency based upon credit. Again and again, in the determination of important policies regarding the farmer, small home owners, and the average business, we assume that what is needed is more and cheaper credit. I seriously wonder whether these assumptions do not contain a maleficent fallacy. The great majority of individuals, in my opinion, are not fitted to use credit safely or wisely. We must devise a more discriminating use and control of credit or we should be better off without it. In our relations to credit we are in many respects children playing with a dangerous weapon. Credit is a two-edged sword.

The economic and financial difficulties which confront us are not only essentially new in their unprecedented size and delicacy, but they change rapidly. Measures of relief which were available in 1930 when the federal treasury had a surplus and the reserves of private business were still undepleted, are not available now. As late as February, 1932, the Treasury hoped to get a tax bill through before March 15th with higher income tax rates applicable to incomes of 1931 and with new excise taxes or a sales tax taking effect in this fiscal year. These expectations were defeated, and because they were defeated, the financial program of the Treasury had to be readjusted. Constant changes of policy and program are necessitated by the dwindling basis of the income tax. In particular, the apparent failure of open market operations by the Federal Reserve banks to stimulate the bond market and business, make necessary a new and measurably different financial policy for the future.

The facts just received have, I think, a vital bearing upon the subject matter of this paper: the intelligent choice of a cause and a leader.

1. They mean, first of all, that there is little significance in past mistakes and no virtue in consistency of attitude. At this time, Speaker Garner and Floor Leader Rainey are waging a vigorous assault against President Hoover because he has changed his mind about a public-works program. What formerly were justifiable work-giving public improvements to the President, they charge, have suddenly become pork-barrel projects.

Now the President may be wrong in the question at issue: I pass no judgment upon that point. But he is not wrong because he has changed his mind. Four billion dollars of new debt has been added to the

liability aide of the federal balance sheet; the credit standing of the government has become perceptibly weaker; and the taxpaying capacity of the American people has dwindled distressingly, since the President last championed public works as a promising method of breaking the depression. I attach little importance to that form of consistency which demands an exact correspondence between past and present attitudes, policies and measures. Few things could be more dangerous, in these kaleidoscopic times, than a president who found it difficult to change his mind.

No Virtue in Consistency

2. There is another type of consistency demanded by certain critics which in this emergency is impossible of attainment. These critics demand an artistic singleness of aim or harmony of design in our financial policy. In the name of retrenchment and economy, they would not only cut out all government waste, but every form of public aid. If we are to economize, they hold, let us economize at every point. They fail to realize the poignancy of present distress and the fact that there is a higher virtue than financial harmony and consistency.

We can have no simple or consistent financial policy for the next two or three years. On the contrary, we must combine in our financial policy several distinct and apparently conflicting purposes. To make my point by exaggeration, I think the Federal Government should, at one and the same time, tax like a Turkish Pasha, cut unnecessary public expenditures like a miser, and lend money like a Croesus in stimulating trade and business. This may sound like a jumble of contradictions. In reality it is not so. It is common in important surgical operations to administer both a sedative and a stimulant. In the major operation to which our ailing financial system must submit, it is essential that the patient be given a heart stimulant shortly after he is deadened and stupefied by the heavy dose of new taxes which, by general consent, he must take.

3. Discussion in this difficult field would be greatly facilitated if everybody recognized the truth that every constructive act is beset with its own particular cost and difficulty. Every remedy has, in Roosevelt's phrase, the defects of its virtues. If we are to balance the budget, we must assume tax burdens which will inevitably repress industry and consumers' buying. If the government, either by the President's three point proposal, by Speaker Garner's program of public works, or by Senator Wagner's compromise, attempts to stimulate consumers' buying and reduce unemployment, it must authorize vast new expenditures or loans to private enterprise, which in turn must be supported by large loans issued or guaranteed by the federal treasury. There is little before us but a choice of evils.

4. There is another aspect of consistency in relation to financial policy which seems to me most important. Sound financial policy in this emergency must be progressive. Time and sequence are essential. It is obvious, for instance, that balancing the budget is a condition precedent to practically every financial program now under serious consideration except the proposal to open up printing presses in the Treasury. And I think a majority will agree that President Hoover was just as right in the past when he opposed federal aid for the relief of unemployment, as he is right now in recognizing that the time has arrived when federal assistance must be provided for certain states or districts which have reached the limit of their financial powers.

5. It is easy to see, in the developing financial policy of the present administration, a steady progression from milder to stronger medicine. But what next? What if the President's three point program or Mr. Garner's public works program be tried and fail, leaving us after the trial with bigger debts, heavier taxes, more unemployment, lower wages and less business than have marked the present year?

What If We Fail?

We reach questions here of the utmost delicacy. Until Senator Reed, on Memorial Day, dragged the topic into the open (for the purpose, according to his critics, of bolstering up the cause of the sales tax), public discussion of the subject by responsible public officials or financiers has been tabu. What if we are beaten in the next battle of the campaign? About that question we have maintained a tacit conspiracy of silence.

I believe that attitude is mistaken. I want from the party and the leader whom I am to follow during the next couple of years, a frank discussion of what they propose to do if present measures fail and financial conditions grow worse. I want such a discussion, first, to test the foresight and resources of the leaders to whom I am to give my allegiance. I want to know how far ahead they are thinking; and with what care they have prepared reserves and new lines of battle. I want such a discussion even more to avert stampede and prepare the public for acquiescence and loyal support in case an entirely new battle on an entirely different front has to be fought. Public leaders in a democracy cannot expect absolutely blind obedience from their following. They must prepare them for new strategy and tactics which may seem in direct conflict with the strategy and tactics hitherto employed. I want discussion, most of all, because I think silence and reluctance to face all the possibilities of the future are investing that future with fake horrors and empty bugaboos. The future contains real horrors only if we fail to face it boldly, examine its possibilities with steady eyes, and make adequate

preparation for it. In one very real sense, the future is likely to be just as bad as we allow it to be.

The Chief Bugaboo

The chief bugaboo of the future is "going off the gold standard." To avoid that is the prime objective of every conservative financial leader. It is at once the foundation, the end, and the controlling premise of all conservative reasoning in this field.

I share and sympathize with this view except in its fear and its policy of silence. By solemn pledge of the public faith, by unequivocal contractual obligations consciously adopted between debtors and creditors, and by constitutional guarantees, the gold standard has been inextricably tied into the American financial and political system. Those pledges and promises should in essence be sacrosanct. But the gold standard, in and of itself, is not sacrosanct; it cannot be preserved by cultivating an attitude of blind adoration and superstitious reverence. It must from time to time, by open discussion and thoughtful explanation, be justified as a helpful and practical financial device. As a mere fetish, it will not survive the present storm.

The essence of the pledges and promises upon which the gold standard rests, I have said, should be regarded as sacrosanct. But the time may easily come when the American people will be forced to make choice between the letter and the spirit of their obligations. Speaking as a creditor and a conservative, I can foresee many contingencies where both the public interest and my interest would be served by a gold embargo, by "suspending specie payments," or even by some essential modifications of the gold standard. Self-interest and common sense, as well as a decent regard for the opinion of mankind, convince me that it would be foolish, as a creditor, under all circumstances to demand my pound of flesh.

Plan for Eventualities

We cannot in honor go off the gold standard until we are forced to go off. And every practicable step should be taken to avert even a gold embargo. But when, to the expert eye, suspension of gold redemption becomes inevitable, we should bow to the inevitable in accordance with well laid plans designed to make that step as little injurious as possible. We cannot avoid discussion of, and should not spare preparations for, such eventualities. We cannot pussyfoot through the next four years. There are ruinously wrong ways of meeting certain financial emergencies which may arise, and there are honorable and relatively innocuous ways of dealing with those emergencies. The public mind should be prepared for them, if we wish to avert rout, panic and disorder. In a democracy, the great army of public opinion needs to know something of the plans of its leaders. In particular, it needs to know something of what its leaders have in reserve. We may be beaten in the financial battle of 1932. If so, the world should understand that we have several other and better fights in us, and that under no circumstances will we play the part of the financial fool or poltroon.

In conclusion, let me disavow any design or desire to champion any particular policy, party or leader. I lost long ago any wish to make converts to my way of thinking. My purpose has merely been to warm up your minds and facilitate your task of making an intelligent choice among the men and financial measures that will solicit your support in the near future. The role of the private in the ranks of democracy is a modest one, but it calls for conscientious thinking and sober judgment.

The Industry's Bookshelf

How To Understand Chemistry, by A. Frederick Collins, 333 p., published by Appleton, N. Y. $2.00.

A popular treatise on chemistry and chemical processes that should appeal to chemical executives and salesmen who find the jargon of the technical department somewhat of a mystery. Written in a style that is interesting and non-textbook like, it will return to those who are in the business side of the industry worthwhile dividends in the form of a better understanding of manufacturing methods and production problems.

Jobs for the College Graduate in Science, by Edward J. v. K. Menge, 175 p., published by The Bruce Publishing Co., N. Y. $2.00.

Many students of our technical schools graduate without any clear understanding of what field they intend to follow—too many have only the faintest idea of what these fields are and their many subdivisions. This book performs a worthwhile duty in summarizing just such invaluable data for the student in search of a job. There would be fewer square pegs trying to fit into round holes were this book read generally.

Practical Mathematics, by Hobbs, MacLennan and McKinney, 448 p., published by American Technical Society, Chicago.

A textbook and review of the principles of arithmetic, equations, formulas, mensuration, graphs and logarithms designed specially for the vocational or homestudy student, for shopmen and for those who wish to use the practical side of mathematics divorced from complex theory.

Measures of Exports of The United States, by Dudley J. Cowden, 119 p., published by Columbia University Press, N. Y. $2.00.

A detailed examination of the export trade of the U. S. measured separately by price changes and volume changes. Over two hundred different commodities are employed.

Japan, An Economic and Financial Appraisal, by Harold G. Moulton, 664 p., published by The Brookings Institution, Washington, D. C. $4.00.

An appraisal of the economic and financial growth of Japan.

Financial Organization and Management of Business, by Charles W. Gerstenberg, 840 p., published by Prentice-Hall, N. Y. $5.00.

Describes methods actually used to finance new enterprises; and for the promotion, expansion, merging, or reorganization of an established business. The material and conclusions are based on the financial practices of over 350 companies whose names are given.

Blueprint Reading For The Machine Trade, by Robert H. Fortman and James McKinney, 154 p., published by American Technical Society, Chicago. $1.50.

A practical handbook on reading every variety of machine drawing. Includes examination questions with answers. Valuable to the designer, engineer, pattern maker, and machinist.

New Products and Processes

Leather Softening

Aliphatic ketones or aldehydes, derived from fats and containing more than ten carbon atoms, after being converted into soluble form, are used for softening leather. The aldehydes or ketones are rendered soluble either by sulphonating with less than the equivalent proportion of sulfuric acid, without the application of heat, or by mixing with an emulsifying agent—*e.g.*, soap. In examples, (1) palmitone is mixed with a highly sulphonated turkey-red oil; (2) a mixture of ketones, prepared by distilling a mixture of calcium oleate and calcium caprate, is treated with the requisite proportion of sulphuric acid, without applying heat. English Patent 364, 327 of the Erba Fabrik of Zürich.

Insecticides

After the insecticidal constituents of *Pyrethrum cinerafolium* are extracted with a suitable solvent, the solvent removed and the extract may be dissolved in pyridine or ethyl lactate, which are miscible with water and do not cause hydrolysis of the active constituents of the extract. Pyridine is preferable when the extract is to be used for agricultural purposes on crop pests; and ethyl lactate should be used when the extract is intended for domestic purposes. Examples: (1) 10 g. of dried and ground-up leaves and stems of P. cinerafolium are treated in a soxhlet under vacuum with 100 c.c. of pyridine. When the pyridine is passing colorless out of the soxhlet it may be concluded that the reaction is finished. A mixture of ten parts of this extract with ninety parts water is sufficiently strong to destroy the most resistant pests. (2) Instead of pyridine petroleum ether of b.p. 60 °C. is used for extracting the pyrethrum. Twenty-five extractions are carried out, and the solvent then removed by distillation. To the distillation residue 25 c.c. pyridine is added. In further examples (3) and (4) ethyl lactate is used and the procedure is similar.—(German Patent No. 515,633, by Union Chimique Belge.)

Quick-drying Linseed Oil

Spencer Kellogg has further perfected their "four hour" drying oil which can be used very advantageously with dark pigments, and also as an addition to other paint oils to accelerate drying. It is a pure linseed oil from which the impurities have been removed and the last trace of moisture removed by high vacuum. This enables the oil to dry in from two and one-half to four hours. It is said that this is the first time in linseed oil history that a pure linseed oil has been produced which dries in so short a time.

New Lacquer Driers

To prevent sedimentation and gelatinization of solutions of naphthenate, linoleate, and resinate driers in volatile organic solvents, olefinic or aromatic carboxylic acids are added to the solutions, according to a patent recently issued to the I. G. Acids specified are the free fatty acids of drying and semi-drying oils, crotonic acid, phthalic acid, benzoic acid and its homologues, and derivatives having a free carboxyl group in the nucleus or side-chain, such as *o*, *m*, and *p* amino-, chloro-, and nitro-benzoic acids and hippuric acid. Free benzoic acid also accelerates the dissolving of the drier, and reliquefies thickened drier solutions and gelatinized lacquers. The quantity of fatty acid required may be, for example, from 3 to 20 per cent of the solid drier, and smaller amounts of benzoic acid, down to one-fourth may be used.

Improved Red Lead

A very fine grain red lead has been placed on the market in Germany by the Th. Goldschmidt A. G. of Essen, under the trade name of "Tego." The product is reported to possess the valuable property of not settling hard in an oil paint, and when mixed with a linseed oil varnish and a binder, without other ingredients, of keeping for a long time. Claims of high dispersion of the product which promotes formation of lead soaps to a greater extent than is the case with the ordinary red lead of commerce are made and that this property imparts to red lead its value as a rust preventive.

Sinterkorund

Siemens and Halske, are producing sinter-corundum (Sinterkorund) from pure aluminum oxide at a temperature of about 1800° C. The material is entirely crystalline and its thermal conductivity, which at 16° C. is about twenty times as high as that of porcelain, is quite insensitive to temperature change. At 400° C. the specific resistance of this material is about 10^5 times that of porcelain, and at 700° C. it is 100 times that of molten quartz. Sinter-corundum is suitable insulation, for motors used in aviation, and is also well adapted for chemical apparatus (crucibles, dishes, etc.), since it is not attacked by hydrofluoric acid, molten alkalies, etc. On account of its hardness (nine according to Mohs scale) it is suitable for cutting tools, whetstones, guides for wire or thread, and also as material for mill lining and grinding rolls. It is also to be recommended as a fireproof construction material. Sinter-corundum will find uses wherever its property of electric insulation at very high temperatures is needed.

Leather Coating

A coating composition for leather containing cellulose nitrate, a plasticizer, and one of the following group of oils in an amount sufficient to render the composition adherent and to provide a finish free from tackiness which can be ironed and glazed, has been patented by duPont. The group of oils that may be used include neat's-foot oil, cod liver oil, sperm oil, lard oil, olive oil, egg oil, and a mixture of cocoanut and paraffin oils.

Rubber-plastics Compound

Articles made from a mixture of rubber, synthetic resins and other fillers, has recently been the subject of British patent No. 355,341. Condensation products such as are formed from phenol, or cresol, and formaldehyde, urea-formaldehyde, etc., are compounded with ground, vulcanized or partially vulcanized rubber; additional fillers, such as wood flour, may be added. The type of rubber waste given in the illustrations is ebonite dust and buffings from the surface of rubber covered rollers; the former would be expected to be compatible with synthetic resin moulding, but the latter falls into the category of soft rubber, and therefore possibilities of the use of such rubber in this connection are very interesting.

New Dyes Series

General Aniline Works have obtained American rights to the German patent covering a new composition of matter, a mixture comprising a 2.3 hydroxynaphthoic acid arylide, and an alkali starch compound being resistant to air, soluble in water and having utility in dyeing and printing processes.

Chemical Facts and Figures

M. C. A. at Absecon

Depression-proof golf relieved the tension of discussion of three fiery topics which held the attention of the industry's

Lammot du Pont

leaders at Sea View, June 2-3. The 60th annual meeting of the Manufacturing Chemists' Association—held jointly as is the pleasant and profitable custom of the past four years—was not the joyful jubilee such an anniversary warrants, but there was a load of necessary business carted away and careful plans for the coming year's program considered.

Mathieson's Allen and Merrimac's Belknap publicly introduced the touchy, important subject of the amalgamation of chemical associations and institutes into a nation-wide, industry-wide organization —a topic made timely by the recent joining of the Agricultural Insecticide group with the M. C. A. and by the insistent call for economy. High points in the debate were: Chairman of Membership Merck warned that every trade association would probably loose members during the coming year—an argument for consolidation while Mr. Bell (Cyanamid President) pointed out that trade associations dealing with statistics and production were formed for different purposes and suggested caution in amalgamations of incompatibles. The general sentiment, however, was strongly towards the advantages of consolidation of chemical efforts.

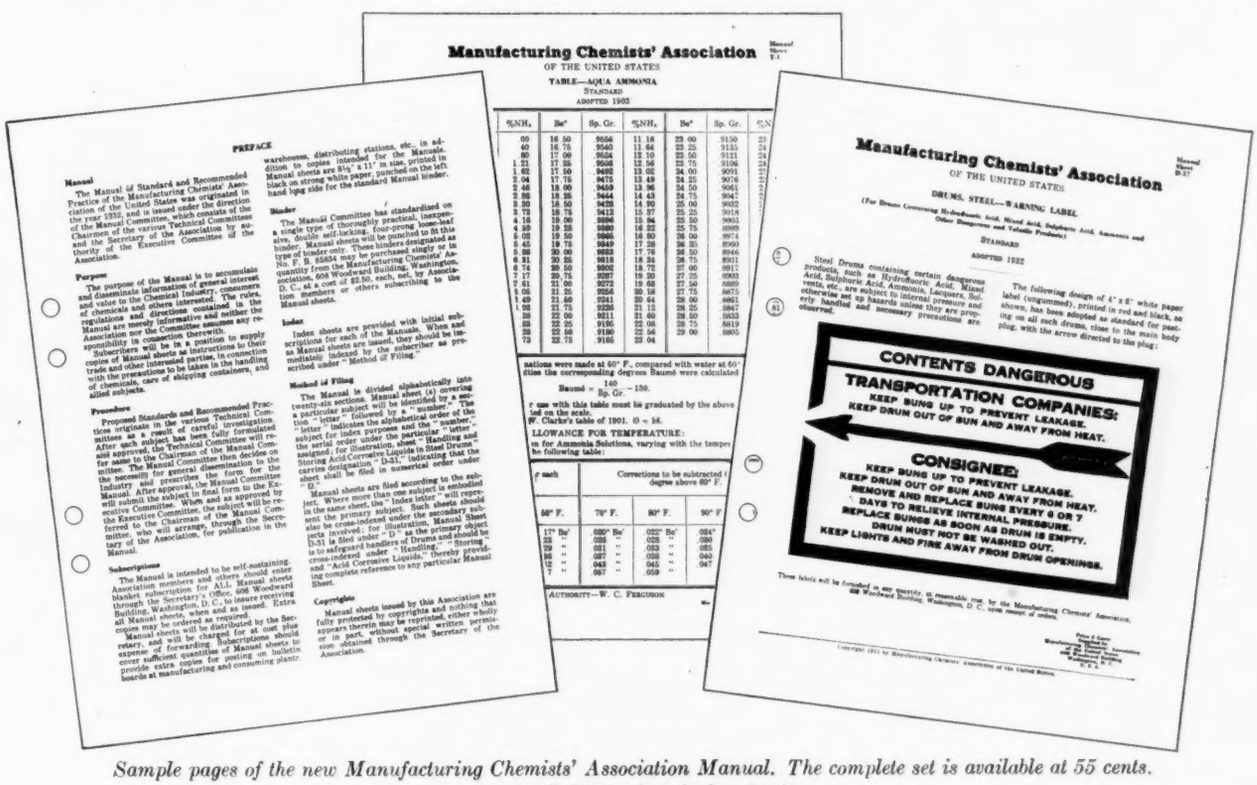
The following papers read at the Manufacturing Chemists' Association meeting at Absecon, N. J., June 2-3, are reported on pages 546-553 of this issue.

What Our Industry Faces
Lammot du Pont
One Chemical Institute
E. M. Allen
Congress and Consolidation
Charles Belknap
Chemicals and Tariffs
Harry L. Derby
An Economist's Message to Chemical Executives
T. S. Adams

The Treasurer through Mr. Huntington reported a slight operating deficit which it was voted to make up by assessment.

A most valuable contribution to the whole industry and all its customers was reported in the starting of a Manual which in time will cover every phase of delivering and handling and storing chemical products including the containers used, their legal specifications, and their inspection and care. Chairman George E. Tiley (General Chemical) amid warm applause

J. W. McLaughlin



Sample pages of the new Manufacturing Chemists' Association Manual. The complete set is available at 55 cents. A suitable binder is priced at $2.50

for the fine work of his committee outlined the plan of the Manual and pointed out the advantages to all of a uniform and available code covering the procedure of packing, inspecting, and shipping chemical wares.

Secretary Warren N. Watson
Making a record as a Washington-N. Y. Commuter

The association re-elected its officers as follows:—

President, Lammot du Pont; vice-presidents, William B Bell, Cyanamid; E. M. Allen, Mathieson; treasurer, J. W. McLaughlin, Carbide & Carbon Chemicals; secretary, Warren N. Watson.

Ernest T. Trigg, John Lucas & Co., Philadelphia, was elected a member of the executive committee, succeeding W. D. Huntington, of Cyanamid. The other members of the executive committee, who were re-elected, are Charles Belknap, Merrimac Chemical, chairman; Charles W. Willard, General Chemical; H. L. Derby, Kalbfleisch; George W. Merck, Merck & Co.; J. H. Dunbar, Grasselli Chemical; Leonard T. Beale, Pennsylvania Salt.

Chemists Bait Banker

Broderick Haskell, Jr., Guaranty Co. of N. Y. declared in an address June 3, at a symposium on "Economics of Research" under the auspices of the N. Y. Section of the A. C. S. in the McGraw-Hill Auditorium, that industrial research is one of the strongest factors making for recovery.

Forces creating new industries are constantly at work, and when the depression is over it will be found that those companies accomplishing the most by way of research will have led the way toward prosperity, asserted Mr. Haskell, whose theme was "A Banker's Viewpoint of Industrial Research."

One of the arguments continued Mr. Haskell, advanced by those who are discouraged over the ultimate future of business in this country is the tremendous over-capacity to produce that today pervades our entire industrial structure.

"This condition has existed at the depth of every depression. It is inevitable, but it does not spell the end of profitable enterprise in this country today any more than it has at like times in the past unless we have reached and passed the zenith in industrial art, which is one theory I have yet to hear advanced and to which I am sure technical men and bankers alike would not subscribe.

"The solution to such over-capacity will come largely through obsolescence, and the faster it comes the better off we will be. The only way it can be induced is through research and development. Already in this country there are hundreds of idle plants or parts of plants that will never again produce, and it will not be for want of capital or want of markets."

Harold Hotelling, professor of mathematical economics at Columbia, discussing "Research and Obsolescence—Profit and Loss," pointed out that losses as well as gains unfortunately arise from new inventions and discoveries. The losses, he said, often fall unexpectedly and with crushing force upon those who in good faith have made investments which have become obsolete.

That Nitrate Question Again!

Mr. Haskell's paper evoked the liveliest hour of debate that has taken place at any of the N. Y. Section meetings this year. Introduction into the discussion of the Cosach promotion by the Guggenheim and other banking interests here and abroad, caused the speaker a few minutes of uneasiness, but he happily was able to point out that his company had not participated in the underwriting, although the opportunity to do so was afforded it. He stressed the point that bankers too were giving more time to their particular research problems and looked for a more careful scrutiny of details in the future before lending their prestige to stock sales. Frank G. Breyer, (Singmaster & Breyer) started considerable discussion on the question of where companies were to get the needed money for maintaining research next year, pointing out that in 1921 large war profits were still intact for this purpose but that such a condition does not exist today. Mr. Haskell felt that banking interests would gladly furnish these funds to companies with satisfactory records.

Mr. Breyer also spoke briefly on unemployment, announcing that but 600 had so far contributed to the fund. He urged a wider cooperation on the part of every one connected with the industry. The sum urgently needed is $15,000.

THE MONTH REVIEWED

May

5 House passes the Shoals Bill 183 to 132. (561)

18 Chilean Nitrate interests form a protective committee. (561)

19 Congress requests ammonium sulfate data. (562)

23 Insecticide & Disinfectant Mfrs. Association meets in Chicago. (538)

25 Mathieson reduces dividend. (568)

June

2 Manufacturing Chemists' adopt manual of standardized shipping. (559)

Died

May

6 Lorenzo Benedict.

15 Frederic M. Harrison.

19 David Oliphant Haynes.

June

5 Augustus D. Ledoux.

Becoming to Common

Chilean politics, sething with intrigue for months, finally entered a still new phase with the declaration of a socialist republic on June 5. President Esteban Montero, reputed Chilean strong man of the hour, was reported in full flight, and U. S. investments of over $600,000,000 were said to be dangerously close to repudiation.

The latest to seize the reins is Carlos Davilla, former Chilean ambassador at Washington, and editor of the outstanding *La Nacion*. The new provisional president played a leading part in the formation of Cosach in this country, and was considered rather conservative in Washington circles. He is a newspaperman of first rank. He revolutionized the press of Chile when he completely reorganized the style of *La Nacion* to conform with the best practices in this country and practically every Chilean newspaper was forced to adopt his methods. While in Washington he maintained an aloofness to society, preferring to spend his early morning hours riding in Rockcreek.

Ex-Pres. Juan Esteban Montero
No longer smiling—fired!

In a manifesto published in *La Opinion*, the complete seizure of big business and large estates were two points stressed. Whether Chile will attempt a complete socialization of industry approximating the Soviet plan remains to be seen, but

undoubtedly the latest bloodless revolution will have far-reaching effects specially on the Cosach status.

Dissolution of Cosach, is indicated as in prospect. Reopening of small nitrate plants which were closed when the syndicate was formed is forecast, with the old-style Shanks extraction process to be revived in order to create more employment. The new Guggenheim patented process apparently will be ignored.

Cosach Pres. M. G. B. Whelpley
His troubles are multiplying

Provisional President Davilla announced, however, that the *La Opinion* "manifesto" contained a number of groundless assertions, including that dealing with the Cosach. Aside from the question of repudiation of American investments in Chile, the question of nitrate prices for the coming fertilizer year holds dangerous possibilities of a disastrous price war in the nitrogen field. The new government apparently is determined to increase employment in Chile at any cost.

Locking The Stable Door?

Medley G. B. Whelpley, Cosach president, announced during the month formation of a committee for the protection of the interests of creditors and securtiy holders of Cosach; Lautaro Nitrate Company, Ltd., and the Compania Salitrera Anglo-Chilean. The step was taken at the request of the creditors and security holders. The committees will represent them in the consideration of any reorganization plan.

Mr. Whelpley issued the following statement:

"As has been previously announced, the Chilean nitrate industry, which has been adversely affected by the current economic depression, faces the necessity of a readjustment of its debt and capital structure. The matter has been under consideration by the Chilean Government and officers of the company in consultation with some of the principal creditors and bondholders. It is believed that the formation of committees will assist in the development of reorganization plans and that they will provide during the interim the channel through which concerted action could be taken on behalf of the bondholder and creditors.

"The members of the committee are Henry P. Fletcher, former Ambassador to Italy, Belgium and Mexico, Minister and Ambassador to Chile and Under-Secretary of State, as chairman of the committee; Solomon R. Guggenheim of Guggenheim Brothers, Charles E. Mitchell, chairman of the National City Bank; D. Stewart Iglehart of W. R. Grace & Co., Arthur Lehman of Lehman Brothers. Garrard Winston will act as counsel for the committee and Robert N. West of 55 Wall St., will act as secretary.

"A similar committee has been formed in London, the members of which are Alexander Baring of Baring Brothers & Co., Ltd.; Sir Bertram Hornsby, chairman of the Anglo-South American Bank, Ltd.; A. A. Jamison of Robert Fleming & Co., Ltd.; H. P. Lawson of W. Greenwell & Co., London; A. Levine on behalf of the British Insurance Association; L. A. Stride of the Industrial and General Trust, Ltd.; Henry F. Tiarks of J. Henry Schroder & Co., London; A. H. Wynn of the Mercantile Investment and General Trust Co., Ltd.; Nigel Campbell of Halbert, Wagg & Co., Ltd., is chairman, and Robert J. Stopford of 41 Threadneedle Street, London, E.C.2, is acting as secretary."

British Aid

The Anglo-South American Bank (London) announced May 19 that an arrangement in principle had been concluded with a group of banks headed by the Bank of England by which certain assets of the Anglo-South American Bank connected with the nitrate industry would be taken over. These assets amount to more than £7,000,000, or about $25,620,000. At present their value cannot be realized.

The transfer is subject to a guarantee by the Anglo-South American Bank, the bank being simultaneously relieved of demand liability for an equivalent amount. Contingent liability respecting this guarantee will rank after deposits and all other liabilities to clients.

Shanks Process in 1931

The year 1931 witnessed the opening of the second Guggenheim process plant in Chile and the definite closing of over 100 small plants using the "Shanks" process according to a report by the Department of Commerce.

When the Cosach was formed it was thought that the Oficiana Chacabuco would be the only one of the Shanks type to continue operations. This is the only one operating in the Antofagasta pampa, which is practically all cleared of nitrate. However, due to the serious unemployment situations of the Iquique district two Shanks plants were opened there.

The Oficina Condor, near Iquique, is the only plant outside of the Cosach which has continued operation during the year. It is controlled by French capital. This plant can operate at the present low prices only because it is working nitrate ores of over 25 per cent.

The two Guggenheim plants in operation are able to work ores as low as 9 per cent of nitrate content. The fourth Shanks plant which continued operation under the Cosach was near Taltal.

COMING EVENTS

American Chemical Society, meeting, Denver, August 22-26.

American Electroplaters' Society, 20th Annual Convention, Benjamin Franklin, Philadelphia, June 20-23.

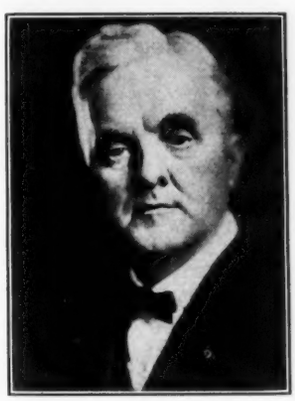
American Institute of Chemical Engineers, spring meeting, Schenectady and Corning, N. Y., June 15-17.

American Society for Testing Materials, Annual meeting, Atlantic City, June 20-24.

Salesmen's Association, Golf meetings, July 12, August 9.

Washington

The House passed the Hill Muscle Shoals Bill on May 5 by a vote of 183 to 132. The vote last year on the adoption of the conference report was 216 to 153. That the Hill Bill failed to pass by a two-thirds majority was considered a victory by those opposed to the measure as it is likely to insure the President's veto of any legislation designed to lead to governmental operation.



Senator George W. Norris
His Shoals legislation is side-tracked

The Norris Bill was side-tracked in the Senate in favor of the tax bill and present indications point to lack of time before adjournment for the national conven-

tions for any consideration of the measure. Washington expects that Congress will reassemble in July and that at that time Muscle Shoals legislation will be given preference.

Senator Bankhead (Ala.) has announced that he will propose an amendment to the Norris Bill providing for private operation and without any provisions for governmental operation, either directly, or under the guise of unusual leasing terms.

The Insecticide and Disinfectant Manufacturers' Association is sponsoring a bill introduced by Senator Copeland (N. Y.) to bring disinfectants of the coal-tar and pine-oil types under the Disinfectant Act of 1910. The idea back of the movement is to establish a set of standards for products of this nature. There is little likelihood, however, of the measure receiving any attention at this session.

The Volatile Poison Bill was referred during the month to the Surgeon General, with the request that he investigate the general question of health hazards connected with chemicals and chemical products usually employed in household preparations and to report recommendations. It is expected that the measure will be completely rewritten before it again comes before the Senate and House.

Waiting the Verdict

On May 9 Rep. Hampton P. Fulmer (S. Car.) introduced a resolution requesting the Secretary of the Treasury to

Assistant Secretary Seymour Lowman
Congress would like to know what he heard

submit to the House the entire record of the investigation on "anti-dumping" of sulfate of ammonia. On May 19 the House passed this resolution, adding, however, an amendment reading "if not incompatible with the public interest."

Balancing the Budget

Washington was the center of interest of the entire country during the month as Congress struggled in an attempt to reach some settlement of the budget. For a time it seemed possible that the House would reconsider the manufacturers' sales tax. There is little doubt that responsible "folks back home" have written to their representatives in greater numbers than ever before. The situation was further enlivened by a rather acrimonious debate between Speaker Garner and the President. At the last moment the manufacturers' sales tax idea was again thrown into the discard. Under the spur of a personally delivered presidential message the Senate buckled down to the job of passing a measure that will instill some resemblance of confidence in the country that the budget will at least appear to be balanced,* although its provisions are bound to create disgust and disapproval generally with business leaders throughout the nation. Something tangible, however, is better than nothing at all. The country is Congress weary, and hopes, but with little expectation of fulfillment, that it will stay recessed.

The Tariff Commission announced that the proposed investigation of lithopone has been discontinued.

*Bill signed by Pres. Hoover June 6.

Employment Gains

Factory employment in chemicals and related products showed a gain in April sufficient to pass the record made in February. The index number of the United States Bureau of Labor Statistics for employment in these industries in April was 80.6 (100 = monthly average in 1926), compared with 79.9 for March, 80.3 for February, and 92.8 for April 1931.

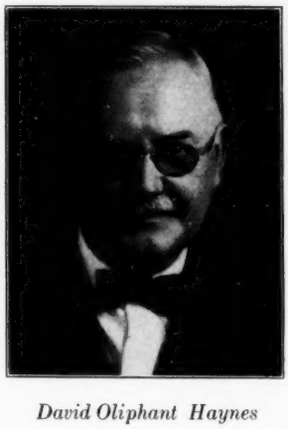
Factory payroll totals in the chemical and related industries declined steadily from February through April. The bureau's index number for April was 68.2 compared with 69.7 for March, 70.6 for February, and 89.5 for April, 1931. The bureau's general index numbers for manufacturing industries for April were:—Employment, 62.2; payroll totals, 44.7.

	Employment			
	Apr., 1932	*Mar., 1932*	*Feb., 1932*	*Apr., 1931*
Chemicals	87.7	88.9	88.9	96.2
Fertilizers	90.0	63.9	56.6	116.4
Petroleum refining	65.1	65.2	66.4	77.9
Cottonseed oil, cake, and meal	41.1	46.5	48.2	54.5
Druggists' preparations	74.2	79.6	78.8	81.9
Explosives	75.4	77.9	84.3	104.0
Paints and varnishes	72.8	74.2	73.9	84.2
Rayon	138.8	143.7	149.2	148.0
Soap	96.5	96.8	96.5	101.6
	Payroll Totals			
	Apr., 1932	*Mar., 1932*	*Feb., 1932*	*Apr., 1931*
Chemicals	68.0	70.9	70.7	84.1
Fertilizers	58.2	42.7	40.4	105.4
Petroleum refining	58.7	60.1	61.9	79.7
Cottonseed oil, cake, and meal	40.4	45.3	49.5	52.6
Druggists' preparations	74.5	79.7	81.2	93.1
Explosives	51.5	56.4	58.6	84.4
Paints and varnishes	62.8	65.0	64.3	84.7
Rayon	125.6	133.1	136.5	149.8
Soap	90.5	89.4	89.7	109.1

Chemists' Club first golf tournament is scheduled for June 30 at the Rye Country Club, Rye, N. Y., with Robert Quinn, assistant sales manager, Mathieson Alkali, in charge. Luncheon and dinner will be served and members who are not golf enthusiasts are urged to attend the dinner. Prices will be awarded for several events. A second tournament will be arranged if the turnout at the first reaches 50 members and guests.

Obituaries

David Oliphant Haynes, founder of this business magazine, died suddenly of heart failure at his home in Garden City, Long Island, May 19. He retired from active business a year ago, after having been for more than 45 years a leader of industrial



David Oliphant Haynes

journalism. In 1887, he resigned as production manager of Parke, Davis & Co. to establish "The Pharmaceutical Era" in Detroit. In 1894, he removed his publishing business from Detroit to New York and two years later purchased "The Soda Fountain." In 1898, he acquired "The Commercial Shipping List" the oldest business paper in America which he turned into the daily "New York Commercial" now merged with the "Journal of Commerce." In 1914, he started the weekly "Drug & Chemical Markets" the predecessor of "Chemical Markets" and of "Drug and Cosmetic Industries." Mr. Haynes also published many books, among the best known being a monumental history of American business, "American Commerce" (1896) edited by Chauncey Depew, the Era Formulary, A Key to the U. S. Pharmacopoeia. He was born in Detroit, August 21, 1858, son of Levi Hasbrouck and Caroline Oliphant Haynes, and in 1885 he married Helen, daughter of Nathan Gallup Williams of Detroit, a pioneer of the Great Lakes shipping interests. His widow survives, as do his five children, Williams Haynes, publisher of "Chemical Markets;" Hasbrouck Haynes and D. O. Haynes, Jr. of the Haynes Corporation, industrial engineers of Chicago, and Mrs. Helen Haynes Adams and Mrs. Bartlett H. S. Travis both of Garden City.

Frederic M. Harrison

Frederic M. Harrison, 66, former president of U. S. I., died May 15 at his home in Montclair from the effects of a stroke of apoplexy. He resigned from the presidency of the Alcohol company at the annual meeting on April 20. He was a member of the advisory board of the Alcohol Institute. Mr. Harrison was born in Brooklyn, moving to Montclair in 1872. He was active in politics in that

community for several years, serving as a member of the Town Council for several terms. He is survived by his widow, two daughters, two sons, a brother and three sisters, all residents of Montclair. He was a member of the Montclair Golf Club, Lotus of N. Y. City and a number of organizations connected with the chemical and allied industries.

Lorenzo Benedict

Lorenzo Benedict, 70, president of Worcester Salt, died May 6 of pneumonia at the Orange Memorial Hospital at Orange, N. J. Mr. Benedict had been connected with his company for over 50 years in various capacities. Starting with Nash, Whiton Co. in N. Y. City in 1879 he became connected 8 years later with the Duncan Salt Co. Later the consolidation became known as the Worcester Salt Co. He was connected with several companies as a member of their directorates and was very active in philanthropic work in the Oranges. He is survived by his widow, two daughters and three brothers.

Augustus Damon Ledoux

Augustus Damon Ledoux, 65 chemical engineer and manufacturer, president of the Pyrites Co., Ltd., an American subsidiary of The Rio Tinto Company, Ltd., of England, died June 5, after an illness of five days of complications that followed an operation for appendicitis.

In the early '90s Mr. Ledoux was general manager of Virginia-Carolina. From 1895 to 1902 he was vice-president and general manager of Tennsesee Chemical with headquarters in Nashville, Tenn. He then became general manager for North America for the Rio Tinto Company, Ltd., and the Pyrites Company, organizations with which he remained associated thereafter.

When the U. S. entered the World War Mr. Ledoux was appointed chairman of the pyrites committee of the chemical division of the Council of National Defense. He also was a director of the Chemical Alliance, Inc., and chairman of its committee on pyrites. Early in 1918 he was made chairman of the committee on production, distribution and control of sulfur materials for the War Industries Board and the Chemical Alliance. During the war period Mr. Ledoux also served on the committee on ferro-allows of the American Iron and Steel Institute. He was a member of that institute, of the Society of Chemical Industries, Foundrymen's Association, Westchester County and the Columbia Club.

Charles G. Prescott, 54, general manager, Cincinnati branch of the A. A. C. Co., for the past 34 years, died May 2, at the Good Samaritan Hospital in Cincinnati. He had been in ill-health for several months and recently returned from Florida where he had gone to recuperate.

Personnel

Board of directors, Pacific R & H Chemical Corp. El Monte California, recently elected C. K. Davis chairman of the board; Dr E. A. Rykenboer, president; F. S. Pratt, vice-president; A Frankel, treasurer; H. A. Schumacher, assistant

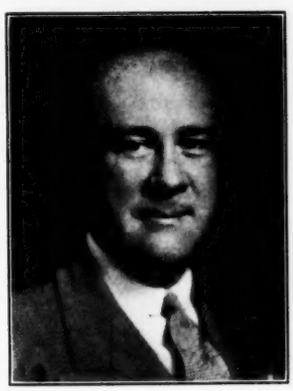
Dr. E. A. Rykenboer
Heads R & H in California

treasurer; L. Rice, secretary; and J. L. Fahs, assistant secretary. Pacific R & H, subsidiary of R & H, is one of the largest manufacturers and distributors on the Pacific coast of Liquid HCN and Cyanides for fumigation purposes, and also manufactures reclaimed rubber.

Dr. Rykenboer is vice-president and assistant general manager of R. & H. He is also a director of Niacet Chemical and was recently elected a director of The Midland Ammonia Co., Midland, Mich.

Cooper in Prior Co.

George S. Cooper, formerly sales manager, Diamond Alkali, Pittsburgh, has acquired a financial interest in H. B. Prior Co., well-known New York jobbing



George S. Cooper
Springs a surprise on the alkali industry

firm and representative for a number of nationally important industrial chemical manufacturers. At a recent meeting of the directors he was elected vice-president, and will be intimately connected with the sales policies of the Prior Company.

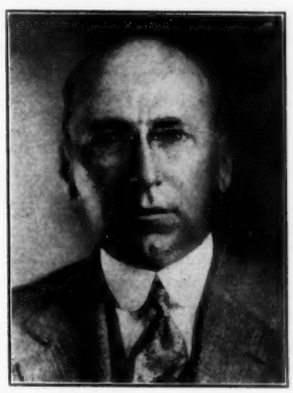
At the end of the World War Mr. Cooper joined the sales development department of Hooker Electrochemical, spending most of his time in the South. With the formation in 1929 of the W. F. George Chemicals, Inc., N. Y. City, he became secretary and treasurer. In 1922 he resigned to enter the sales department of Diamond with headquarters in Pittsburgh, and in 1930 was made sales manager.

Included in the sales representations of the Prior Company are Diamond Alkali's soda ash, Carbide's caustic, and Standard Chromate's bichromate of soda.

Mr. Cooper's new headquarters are at the main office of H. B. Prior Co., in the Graybar Building in N. Y. City. He assumed his new position on June 1.

Swann Changes

Edward L. Sayers, Swann vice-president has been placed in general charge of the district including Maryland, Virginia, the Carolinas and Georgia. Mr. Sayers is a prominent figure in industry as he has held a number of important engineering, production and executive positions since graduating from Columbia in 1903. His



Edward L. Sayers
Deserts production for sales

headquarters will be at Charlotte. Assisting Mr. Sayers, with headquarters at Charlotte, are O. L. Williams, who will cover the greater part of North Carolina and Virginia; J. F. Yeates, Jr., who has been assigned to South Carolina, and B. F. Morgan, who will cover the Shenandoah Valley from Bristol, Va., to Hagerstown, Maryland. The Baltimore office is in charge of Dr. J. W. Perry, Jr., who until recently was engaged in chemical teaching and research work. He will be assisted by John W. Davis.

Arthur W. Mudge is directing sales of raw materials for the perfume and flavoring extract industries of the chemical divisions of DuPont. Mr. Mudge has headquarters at 260 West B'way, N. Y. City.

H. C. Mandeville of Elmira, N. Y., was elected president of Worcester Salt to succeed Lorenzo Benedict who died May 16. Formerly president of Remington Salt of Ithaca, Mr. Mandeville has been engaged in the salt business for 20 years. He has been a director of Worcester Salt since 1929.

National Oil Changes

National Oil Product's personnel was completely reorganized recently according to an announcement made by Charles P. Gulick, president. The following department managers have been named by President Gulick to specialize and devote

Pres. Charles P. Gulick
Shakes up his organization

their entire time to the various industries which the company serves: G. D. Davis, general sales manager; O. E. Lohrke, manager of the paint, oil and metallic soaps division; Dr. C. I. Post, manager of the tanning oil division; L. D. Grupelli, manager of technical sales promotional department, and Leslie M. Brown, director of sales of the farm feed division, and T. A. Printon, manager textile oil division. Hereafter the company will serve its customers by industries rather than by territorial locations.

Ralph Wechsler heads the company's laboratories, while Dr. K. T. Steik is research director. The technical service staff includes L. W. Davis, Dr. D. S. Chamberlin and R. E. Porter. Among new men taken into the organization are E. C. Rebholtz, H. F. Leupold, G. W. Standish and S. S. Mattison.

The company will maintain branch offices in Boston, Chicago, and San Francisco.

Henry E. Jacoby, mechanical engineer, removed from No. 95-97 Liberty St., to 205 E 42 st., N. Y. City. Mr. Jacoby will continue as the exclusive sales representative in this territory of the Zaremba Co., manufacturing evaporators, and D. R. Sperry & Co., manufacturing filter presses, besides specializing in various other forms of chemical machinery and equipment.

W. H. Croft, president of the Magnus Co., was elected a vice-president of National Lead and placed in charge of all matters of traffic and sales. He will also continue as head of Magnus.

Arthur W. Wilkinson resigned as treasurer and general manager, Sterling Products, his duties being assumed by Howard B. Bishop.

Ralph C. Brown, superintendent, National Carbon plant at Fostoria, Ohio, has been transferred to the general offices in Cleveland. He will be succeeded by Fielder Israel from the National Carbon plant at Niagara Falls.

George Omohundro, for ten years connected with the electroplating and case hardening division of Cyanamid, is now with Meterjol Products, a new company manufacturing detergents with headquarters in the Empire State Bldg., N. Y. City.

Milford H. Corbin has been transferred from lacquer development division, Ault & Wiborg, Cincinnati, to technical service and sales at Cleveland.

Mary G. Keyes recently opened a laboratory for chemical analysis, specializing in silicate rocks and minerals, at 1512 31st St., Washington.

William H. P. Oliver was elected director of the Cerro de Pasco Copper Corp. succeeding the late Allan McCulloh.

Personal

Edward M. de Greeff returned to London on the Bremen, May 21, following

Edward M. de Greeff
Visits with Brother Robert

a short visit with his brother, Robert W. de Greeff, president, R. W. Greeff & Co., N. Y. City. Mr. de Greeff is head of the London office.

Dr. A. A. Noyes received the first Theodore William Richards gold medal on May 6. The award is to be made annually by the Northeastern section of the A. C. S. Dr. Noyes was formerly of M. I. T. and is now head of the chemistry department and director of the Gates Chemical Laboratory of the California Institute of Technology. Presentation of the medal was made by the retiring Northeastern Section head, Dr. William P. Ryan. President-elect A. B. Lamb of the A. C. S. was present.

Senate inquiry last month into the inner secrets of the N. Y. Stock Exchange brought out the name of Sir Harry McGowan, I. C. I. head, in connection with a pool in Radio stock Sir Harry's venture was reported to have netted $58,000. Percy A. Rockefeller, Air Reduction director, was also said to have profited to the extent of $46,673 shared in a joint account with Bernard E. Smith.

The Francis C. Phillips Medal Award for 1932 has been awarded to Howard Kane, who will receive his B. S. degree in chemistry in June from the University of Pittsburgh.

J. T. Baker Chemical Co. Research Fellowship in Analytical Chemistry, Mid-Western Division, for 1932-33 was awarded to Vernon E. Stenger at the University of Minnesota. He will work under the direction of I. M. Kolthoff on co-precipitation.

Clyde H. Bailey, professor of agricultural biochemistry, at Minnesota, and cereal chemist in charge of the Section of Cereal Chemistry, Division of Agricultural Biochemistry, Minnesota Agricultural Experiment Station, has been awarded the Thomas Burr Osborne gold medal of the American Association of Cereal Chemists "for distinguished contributions in cereal chemistry."

J. Wrench, sales manager, Industrial Chemical Sales, expects to leave for England and the Continent July 2.

Frederic Pope of N. Y City, president of the Nitrogen Engineering Corp., was one of President Hoover's callers on May 23. The subject of his conference was not announced.

Dr. J. V. N. Dorr, president of the Dorr Co., and a new member of the Consulting Board of Editors of CHEMICAL MARKETS, returned from a European trip on May 23.

George C. Lewis was re-elected president of the Chemists' Club of New York

Pres. George C. Lewis
Willing to serve N. Y. Chemists again

to May, 1933, to succeed himself. He is president of L. Martin Co., Darco Sales Co., and a director of Columbian Carbon.

Chemical executives arriving recently from European trips included W. D. Huntington, Cyanamid, A. A. Holmes, G. Ober & Sons, and Sidney B. Haskell, Synthetic Nitrogen Products. Dr. Paul D. Merica, assistant to the president of International Nickel is scheduled to return June 15. Other sea-going chemical leaders were Charles P. McCormick, vice-president, McCormack & Co. who sailed May 7 on the "Britannic", Otto A. C. Hagen, president, Otto A. C. Hagen Co., and James J. Kerrigan, Merck sales manager who left via Quebec.

Brooklyn Polytechnic Institute will confer on June 15 the degree of Doctor of Science on Professor Moses Gomberg, Chairman of the Department of Chemistry, University of Michigan and past president of the A. C. S. The same degree will also be conferred on Professor Irving W. Fay of the Polytechnic who becomes Professor Emeritus of Chemistry after 35 years of service at the Institute. Both scientists will be honored guests at the Corporation Dinner to be held June 15 at the University Club in N. Y. City.

Boyd Hardin, Arizona Chemical, Camp Verde, Ariz., is now in Dutch Guinea.

Dr. Henry G. Knight, chief of the Bureau of Chemistry and Soils, U. S. Department of Agriculture, was elected president of the American Institute of Chemists for the period 1932-1934, succeeding Dr. Frederick E. Breithut, who has held office for the last four years.

Other officers elected were: vice-president, M. L. Crossley, chief chemist, Calco; treasurer, D. P. Morgan, Jr., chemical economist for Scudder, Stevens & Clark; and secretary, Howard S. Neiman, patent attorney and editor, Textile Colorist.

Prof. Hugh Stott Taylor, chairman of the chemistry department at Princeton has been chosen to deliver the Edgar Marburg lecture at the 1932 annual meeting of the American Society for Testing Materials in Atlantic City in June.

Mr. and Mrs. Kenneth Tuttle Barnaby of this city and Barnhouse, Pound Ridge, N. Y., announced the engagement of Mrs. Barnaby's daughter, Miss Elizabeth Williams Haynes, to Paul D. Bunker Jr., a cadet at the United States Military Academy, West Point, N. Y. Miss Haynes is the daughter of Williams Haynes.

Francis P. Garvan, president, Chemical Foundations, was awarded the 1932 Mendel Medal, which is bestowed annually by Villanova College, Villanova, Pa. The medal was formally presented at the college commencement exercises June 7.

C. Wilbur Miller, president Davison Chemical, named a candidate for membership in the Republican National committee for Maryland.

Albert F. Baker, Bradley & Baker served as chairman of the committee on golf at the annual meeting of the National Fertilizer Association held at White Sulphur Springs, June 6 to 8.

Dr. V. C. Holland, chemical engineer for Virginia-Carolina Chemical was guest of honor at a recent meeting of the Virginia section of the A. C. S.

Joseph Wafer, assistant sales manager Industrial Chemical Sales added to his reputation by being selected as soloist at the Annual Banquet of the American Water Works Association May 4. He was accompanied by William Orchard, general sales manager, Wallace & Tiernan.

Major Thomas Knowles and Thomas P. Berington, two directors of Monsanto Chemical Works, Ltd., British division of Monsanto, who are visiting America, were entertained May 11 by a dinner in their honor given by Monsanto executive officers at the Racquet Club in St. Louis.

Dr. C. M. A. Stine, duPont research director addressed a dinner meeting recently at the third annual conference of donors to the Johns Hopkins national fellowship plan.

David H. Scott, president, East Coast Fertilizer, Wilmington, N. C., suffered a severe injury in an automobile accident on May 7.

Theodore Swann received the degree of Doctor of Science at the 60th commencement of Alabama Poly on May 17.

Dr. Edward Curtis Franklin, professor emeritus of organic chemistry at Leland Stanford received on May 20th, the Willard Gibbs Medal of the Chicago Section of the A. C. S. for "eminent work in and contribution to pure and applied chemistry."

H. W. Bennett, president of the Tung Oil Association addressed the Drug and Chemical Section, N. Y. Board of Trade on May 26, discussing the possibilities of future development of this important oil.

CHEMICALS STATISTICS

Year and month	General operations: Employment F. R. B. Indexes: Adjusted	Unadjusted	Pay rolls, unadjusted	General operations: Stocks: Manufactured goods	Raw materials	Ethyl alcohol	Explosives	Rosin, wood	Turpentine, wood	Superphosphates	By-product coke	Arsenic, refined	Fertilizer	Potash salts	Nitrate of soda
						Production							Consumption	Imports	
	Monthly average, 1923–1925 = 100					Thous. of gals.	Thous. of lbs.	Barrels		Thous. of short tons		Short tons	Thous. of short tons	Long tons	
1930: March	107.5	112.5	111.6	140.9	104.3	10,151	30,221	44,964	8,129	343	4,361	864	1,867	92,208	106,521
1931:															
March	89.8	93.3	89.8	132.0	96.5	11,929	25,414	33,544	5,740	226	3,256	1,506	1,353	60,394	120,164
April	91.7	96.7	92.0	129.0	91.5	11,162	27,647	35,585	6,344	195	3,146	964	1,132	30,206	67,008
May	93.0	91.4	88.4	129.3	88.4	13,120	26,960	33,593	5,996	162	3,126	1,044	195	17,706	34,006
June	89.6	86.7	84.1	124.1	87.9	13,111	25,981	34,747	5,675	146	2,715	1,024	74	14,650	29,711
July	89.4	86.2	82.9	119.2	86.7	11,975	25,068	28,495	4,370	143	2,569	997	25	67,958	18,809
August	86.6	84.4	80.4	117.4	85.3	12,363	24,548	17,074	2,607	162	2,443	1,238	40	65,043	35,367
September	85.7	86.0	80.8	120.4	99.5	12,952	26,598	25,058	3,797	142	2,310	1,252	91	66,440	48,590
October	85.4	85.7	80.8	127.0	120.7	16,037	25,282	26,102	3,922	141	2,389	1,180	94	50,071	33,968
November	83.1	83.5	76.4	131.9	133.9	14,084	24,509	21,440	3,547	143	2,276	1,126	66	12,872	29,871
December	81.9	82.0	75.0	126.9	124.6	14,002	18,595	23,242	3,733	188	2,234	1,172	67	11,998	17,029
1932:															
January	81.9	81.7	71.4	148.0	115.9	13,224	18,175	23,196	3,626	187	2,101	857	172	12,245	34,137
February	80.2	81.1	72.1	155.0	107.2	10,340	18,064	20,006	3,121	177	1,996	841	365	35,729	8,404
March	78.6	81.1	69.4	156.4	100.0			26,187	4,329		2,089		644	41,834	54
Monthly average, January through March:															
1930		111.1	110.3	139.1	111.2	10,893	31,817	41,844	7,706	388	4,168	805	1,156	94,532	93,926
1931		95.0	91.0	130.5	102.5	10,886	27,242	30,121	5,377	251	3,082	1,495	768	45,293	78,158
1932		81.3	71.0	153.1	107.7			23,130	3,692		2,062		394	29,936	14,198

Reproduced from Current Survey of Business, U. S. Dept. of Commerce

Cyanamid's most successful and best attended annual Spring outing and golf tournament held Saturday, May 21st at the Blue Hill Country Club, Pearl River, N. Y. The attendance from the parent and associate companies was about 120 and all took an active part in the tournament and other festivities. Thirteen four-men teams, each representing a different unit, competed for the President's cup.

The President's trophy for low net team score was won by the Kalbfleisch Corp., comprised of H. L. Derby (75), P. M. Dinkins (82), J. Frediksson (78), and J. M. Kingston (69), total 304. The Calco Trophy for individual low gross score, donated by Mr. R. C. Jeffcott,was won by Mr. C. A. Fowler, score 82. The Golf Committee cup for the individual low net score was won by Mr. J. M. Kingston, score 69.

The Kickers Handicap resulted in a four cornered tie between Messrs. Dr. Eickham, F. M. Fargo, Jr., H. C. Klipstein, and J. M. Kingston. The drawing was won by Mr. Kingston. The low put score was a tie between Messrs. H. L. Derby and H. R. Houston.

L. Mundet & Son, Inc. of Texas, Commerce & Palmer Sts., Houston, Texas, have established a sub-branch office at 4600 Gaston Ave., Dallas, Texas. A. A. Stone, formerly one of the sales engineers of the Houston office, has been transferred to Dallas, where he is now in charge. To replace Mr. Stone, Walter R. Rochow has been employed. Mr. Rochow will assist Mr. Willard Selle, manager of the Houston office.

Clarence Morgan announces formation of a new company to be known as Clarence Morgan, Inc. Company will handle a full line of chemicals with headquarters at 919 N. Michigan Ave., Chicago.

Gross Engineering, 3955 W. 25th St., Cleveland, has introduced a new type of lead-coated steel drum of 10 gallons capacity, suitable for handling, shipping and storing acids. Larger sizes may be supplied if desired. The new drum conforms to the 5-A specifications of the I. C. C. Bureau of Explosives for use with sulfuric acid of all strengths, battery acid, electrolyte acids, and hydrofluoric acid, as well as for phosphorus liquid compounds, bromine and other liquids which do not attack lead.

Aluminum Company announced a 10 per cent reduction in salaries and wages, effective June 1. The cut will affect all employes of the company and its subsidiaries.

Church & Dwight's business in 1931 was the best in the 40 years the company has been operating in Syracuse. Present high operating rate points to even better results in 1932.

Company News

Linde Air Products announced during the past month substantial reductions in prices of Oxweld Welding and Cutting Blowpipes.

P. & G. will build a soap plant at Manchester, England, to expand its business in the British Isles. Construction will begin immediately. New plant will be as large and possibly larger than the plant of Thos. Hedley & Co., Ltd., at Newcastle-on-Tyne, which is controlled by P. & G.

Ditzler Color subsidiary of Pittsburgh Plate Glass reports sales for the period from March 15 to April 15 were greater than for any previous month in the company's 30-year history. Company manufactures automotive lacquers and other finishing materials.

Vanadium probably will close plant of the Southern Mineral Products Co. at Piney River, June 1 according to reports. The Vanadium titanium plant recently employed 300 men, but 100 were laid off during the past few weeks. Charles Rees, vice-president, appeared before the House Ways and Means Committee in Washington recently and asked for a tariff adjustment to meet competition of titanium ore from India, similar to that produced at the Vanadium property. Indian ore producers are now able to ship titanium to the United States at lower prices than it can be produced in this country, he maintained.

Hewitt Bros. Soap Co., Dayton, Ohio, purchased the plant of the Joyce Cridland Co., which adjoins its plant, according to James M. Hewitt, president and treasurer.

Innis Speiden's offices will be closed on Saturdays until further notice.

Canadian Industries, cellophane plant at Shawinigan Falls, has been placed in operation. Shipments started the first week of May. Plant has been erected at a cost of approximately $1,000,000 and is the fourth new plant erected by Canadian Industries in the last two years.

U. S. I.'s new educational exhibit on the ground floor of the Lincoln Building is attracting large numbers.

Wessel, Duval moved from 1 Broadway to the Stone & Webster Building at 90 Broad St., N. Y. City.

Penn Salt has appointed Thomas M. Gillespie salesman in the Chicago district with offices at 20 N. Wacker Drive.

Barrett purchased recently 14 acres of land at Malden, Mass., for a new plant. It is planned to erect tanks for the storage of 3,975,000 gallons of tar and tar products. For fuel consumption, storage capacity for approximately 30,000 gallons of fuel oil and 10,000 gallons of gasoline will be provided. Upon completion the company will move its present plant from Everett to Malden.

Northern Blower Co., Cleveland has added Karl Gross to its staff. Mr. Gross is one of the country's foremost authorities on lead burning, lead coating and homogeneous lead work.

The Dust Recovering & Conveying Co., Cleveland has formed a foreign business department, and has adopted a policy of licensing foreign manufacturers in the principal industrial countries to build and sell, in their own territories, dust collecting and pneumatic conveying equipment from Dracco designs. C. H. de Coningh has been appointed foreign sales manager.

Ralph N. Marble, a minority stockholder in the Western Machinery, a Kansas Corporation with general offices at Wichita, Kansas filed a petition, April 20, in the District Court of that city, asking for a receiver, accounting and dissolution of the corporation, alleging this company had paid no dividends during the past two years, that it had failed to show a reasonable profit upon its investments and that the business was being operated by and for the special benefit of the controlling interests.

On May 18th, the case was presented before the District Court of Sedgwick County. Court denied the application for a receiver, stating that the plaintiff's evidence showed no grounds for the appointment of a receiver.

Toledo Precision Devices, Inc., Toledo is now marketing new automatic batching equipment which reduces batching of materials to a simple cycle of lever and button operations which can be performed by unskilled labor.

Supreme Court declined May 23, to review a decision holding the term, "dry ice," to be descriptive and not subject to trade-mark registration. Appeal was brought by Dry Ice Corp. which had failed in its attempt to prevent use of the term by the Louisiana Dry Ice Corp. and others.

Southern Alkali, jointly owned by Cyanamid and Pittsburgh Plate Glass, purchased gas production of 2,678 acres of land in the Saxet pool, Neuces county, Texas. Company is reported to have paid $225,000 for the gas rights and four cents per 1,000 cubic feet for fuel used by the chemical plant to be erected at Corpus Christi.

American Smelting & Refining Co. has closed its smelter at El Paso for two months.

Foreign Trade

U. S. chemical foreign trade in the first quarter of 1932 continued to show a favorable balance and a revival in exports of crude coal-tar products, according to statistics released during the past month by the Chemical Division of the Dept. of Commerce. Exports exceeded imports by $4,000,000.

Although the total value was reduced materially, this reduction was due partially to a marked decline in prices. The number of invoices during the current quarter was as great, if not greater, than in any other period. There is little evidence of a cessation of demand for American chemicals in world markets generally, even if the sizes of the individual orders have decreased noticeably. The large number of small invoices, however, indicates that some firms formerly giving little or no attention to exports are now endeavoring to cultivate this outlet. There has, moreover, been an increase in inquiries directed to the bureau by firms seeking agents even in the most obscure parts of the world.

Shifts in Products

Some surprises developed during the quarter although the trade as a whole continued depressed. There was a tendency toward the revival of a fair-sized business in commodities which more than a decade ago held prominent positions in the trade, such as exports of coal-tar, coal-tar pitch, and methanol, and imports of lac and shellac, natural camphor, pyrethrum flowers, coal-tar acids, and ammonium sulfate.

Both exports and imports recorded large declines as compared with figures for the corresponding period of 1931, the former dropping 26 per cent, from $33,841,000 to $25,029,000, and the latter 41 per cent, from $36,060,000 to $21,108,000. The table below shows the imports and exports of chemicals and allied products during the first quarters of 1931 and 1932, by major groups.

Exports of gum rosin increased 39 per cent in quantities shipped, from 169,400 barrels in the first quarter of 1931 to 233,700 in the first quarter of 1932, but values fell 6 per cent from $1,420,000 to $1,377,000. Gum spirits of turpentine, however, failed to improve and exports declined from 2,102,000 gallons, valued at $911,900, to 1,896,000 gallons, valued at $706,900.

After small receipts of varnish gums the past two years, imports during the first quarter of 1931 advanced 16 per cent in quantity, to 11,844,000 pounds, and 13 per cent in value, to $1,221,000. Lac and shellac accounted for this increase with a total importation of 6,714,000 pounds.

Phenomenal Camphor Growth

Imports of natural camphor, both crude and refined, more than doubled to 1,141,000 pounds, while values exceeded those of the corresponding period of 1931 by 82 per cent and reached a total of $387,000. Incoming shipments of synthetic camphor, however, fell 19 per cent to 500,000 pounds $135,500.

In the coal-tar products group, exports of tar and pitch returned to important places. Shipments of crude coal tar the first three months of 1932—93,000 barrels—were larger than for the entire years 1930 and 1931. Exports of coal-tar pitch, which exceeded 50,000 tons for the same period, were equal to those of the entire year 1931, double those of 1930, and larger than for any preceding year. The bulk of this shipment was destined for France.

Although the quantity of colors, dyes, stains, and color lakes exported fell 30 per cent, to 4,940,000 pounds, the value declined only 20 per cent, to $1,220,000. Imports, however, showed a loss of only one per cent in poundage, to a total receipt of 1,063,000 pounds ($1,150,000).

In the industrial chemical trade, most of the synthetic organic chemicals registered slight improvements. Those which made the largest gains were: acetone and carbon tetrachloride, which doubled to 1,500,000 and 208,000 pounds, respectively; methanol, which advanced 85 per cent, to 174,000 gallons; carbon bisulfide, 36 per cent, to 629,000 pounds; and miscellaneous synthetic organic compounds, 72 per cent, to 738,000 pounds.

Exports of citrate of lime, until recently an important commodity, rose more than 120 per cent, to 2,118,000 pounds, valued at $190,800. Of the other industrial chemicals which gained, of chief importance, were exports of borax, to 50,864,000 pounds ($911,000); soda ash, to 5,915,000 pounds ($106,000); and textile specialty compounds, to 1,263,000 pounds ($74,000).

With the exception of copper sulfate, potassium nitrate, sodium cyanide, and radium salts, which increased to a rather large extent, imports of industrial chemicals during the current quarter continued to be a little below those of the corresponding quarter of 1931. There were no conspicuous decreases, however.

In the other groups there were few signs of improvement in exports. In imports, however, there were some gains in receipts of pigments, especially chemical, and of ammonium sulfate. This last commodity continued the upward swing started last year, with a total importation of 63,000 tons, valued at $1,398,000 for the first three months of 1932.

United States Chemical Foreign Trade in January-March quarter
(In thousands of dollars)

Item	Exports 1931	Exports 1932	Imports 1931	Imports 1932
Naval stores, gums, resins	3,135	2,582	3,583	2,912
Crude drugs and botanicals	541	251	1,420	1,300
Essential oils	386	371	970	799
Pyroxylin scrap, film base and scrap	199	587	....	....
Sulfur, crude and pyrites	1,749	1,867	336	174
Coal-tar products	2,595	2,240	2,729	2,222
Medicinal and pharmaceutical preparations	4,185	2,915	1,257	861
Industrial chemicals	8,888	6,483	4,577	3,950
Pigments, paints, and varnishes	4,113	2,838	435	377
Fertilizers and materials	3,882	2,580	17,262	5,746
Soaps and toilet preparations	2,960	1,709	631	491

Cut Production

Amos J. Beatty, president of the Petroleum Institute, presiding at the mid-year meeting at Tulsa, June 2, stated,

Amos J. Beatty
Czar of the oil industry finds subjects still unruly

"Crude oil production controls the general situation in the industry and it is still too high, although notable progress has been made in curtailment and proration. A daily average output of 2,000,000 barrels should be the limit at this time, he said." This compares with a daily average flow of 2,169,400 barrels for last week and with a somewhat higher average for several preceding weeks.

Alabama in Line

Alabama State Board of Agriculture adopted changes in fertilizer regulations to bring about uniformity of administration of the fertilizer law at a recent meeting held in Montgomery. Meeting was attended by many Alabama fertilizer dealers and Charles J. Brand, executive secretary, National Fertilizer Association.

"Alabama was the fortieth State to adopt the regulations," according to J. Lloyd Abbot, county member of the board. New regulations become effective October 1.

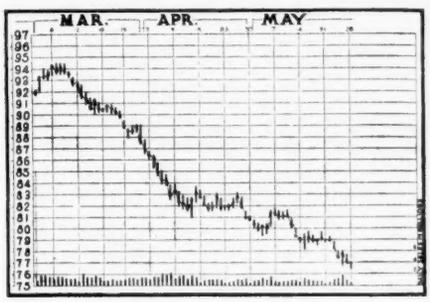
Traffic Meeting

Amendments to I. C. C. regulations covering the shipment of chemicals will be discussed June 20 at a meeting in the office of the Bureau of Explosives, Room 1804,30 Vesey St., N. Y. City. Over 60 items are on the calendar and the hearings will be attended by prominent traffic executives.

The Financial Markets

Stocks Decline Sharply to New Lows—Du Pont, Mathieson and Carbide Dividends Reduced—Allied Unchanged—Inflation Below 1921 Levels

The stock market experienced a fresh wave of distress selling in May. Liquidation embraced all groups with numerous issues at new lows. Washington news was particularly disappointing. Congress after three months of deliberation seemed



as the month closed to be no nearer balancing the budget and adjourning. A ray of hope appeared on the horizon as the new month opened however, when the President addressed the Senate personally urging immediate action. He did not mince words in explaining the seriousness of the situation. As this is written it seems likely that a tax bill will be passed by the second week in June, but without the manufacturers sales tax being included in its provisions. The uncertainty surrounding federal finances has prevented any of the really constructive steps that have been taken from showing any concrete improvement in general business conditions.

The severe depreciation in May followed one of almost equal severity in April and has brought prices down to almost unbelievable levels.

The extent of the drop is shown by a compilation made by *The New York Times* of 240 issues, covering twenty of the prominent groups traded on the Stock Exchange. These stocks depreciated $2,151,994,888, or 30 per cent from the level of prices at the end of April, all groups participating in the decline. This loss compared with one of $2,534,657,948 in April, equivalent to 26 per cent, and with $3,782,578,527 in May, 1931.

From the end of September, 1929, the last full month of rising prices in the bull market, to the end of last month, values of stocks used in this compilation declined 90 per cent. Deflation is a mild term under these circumstances.

The following table shows the decline in group values in May:

Group and Number of Issues	*Avr. Net Ch'ge in Points*	*Change in Values*
Amusements (5)	— 2.875	— $26,184,231
Building equipment (9)	— 2.014	— 30,710,656
Business equipment (4)	— 1.094	— 7,633,861
Chain stores (14)	— 3.000	— 139,670,883
Chemicals (9)	— 2.986	— 82,875,154
Coppers (15)	— 1.217	— 50,596,914
Department stores (10)	— 2.925	— 19,236,602
Foods (19)	— 3.842	— 193,848,823
Leathers (4)	— .156	— 211,446
Mail order (3)	— 2.542	— 31,200,066
Motors (15)	— .925	— 114,955,300
Motor equipment (7)	— 1.375	— 9,589,928
Oils (22)	— .352	— 124,820,153
Public utilities (29)	— 6.733	— 723,057,373
Railroads (25)	— 5.550	— 382,889,077
Railroad equipment (8)	— 1.344	— 25,079,903
Rubber (6)	— 1.125	— 8,922,385
Steels (13)	— 1.529	— 45,648,604
Sugars (9)	— .639	— 4,268,378
Tobaccos (14)	— 5.643	— 130,595,151
Aver. and total 240 issues	— 3.008	— $2,151,994,888

The actual dollar and cents losses in a number of leading chemical stocks are given below:

Allied Chemical & Dye		$12,906,923
Commercial Solvents Corp.		6,641,743
Davison Chemical Co.		315,042
Du Pont de Nemours & Co.		29,047,418
Mathieson Alkali Works		1,626,090
Texas Gulf Sulphur		11,431,800
Union Carbide & Carbon		18,442,804
U. S. Industrial Alcohol		2,523,447
Virginia-Carolina Chemical	$60,113	
Total	$60,113	$82,935,267

In a similar analysis of chemical stocks by the *N. Y. Evening Sun* a total depreciation for the month of $87,137,870, a decline of 12 per cent, was reported. In the *Sun* group Air Reduction with a net loss of $736,128, Freeport with a net loss, of $3,466,469 are included and Virginia-Carolina omitted, otherwise the group is identical with that of the *Times*.

Announcement of several dividend reductions during the month affected the chemical group adversely, in addition to the general depressed feeling existing in most quarters. Du Pont, Carbide, and Mathieson found it expedient to conserve cash positions by lowering dividend rates.

Average Price Lower

CHEMICAL MARKETS' Average Price for 15 representative chemical stocks shows the severity of the latest decline. The Price stood at the following figures at the close of business on each of the successive Fridays: April 29, $19.09; May 6, $19.84; May 13, $18.68; May 20, $17.76; May 27, $16.88. On May 29, 1931 the Price stood at $40.27 a net loss of $23.39 in a year. The common stocks included in the Price are Air Reduction, Allied, Davidson, Anaconda, Columbian Carbon, Commercial Solvents, Corn Products Refining, Devoe & Raynolds, du Pont, Liquid Carbonic, Standard of N. J., U. S. I., Texas Gulf, Union Carbide, and Cyanamid.

Breaking 1921 Levels

Deflation is now past the 1921 level. The 1932 and 1921 low prices for several important chamical stocks are shown in percentages of book value, excluding intangibles, and of equities in working capital after deducting full par value of all prior obligations, in the following table:

	%Low price to book value		*†%Low price to working capital*	
	1932	*1921*	*1932*	*1921*
Allied Chemical	56	61	114	425
American Smelting	16	22	*	*
Eastman Kodak	67	144	158	251
International Nickel	48	37	*	804
Standard Oil of Calif	39	115	273	728
Standard Oil of N. J.	41	71	‡508	258
Texas Gulf Sulphur	126	124	269	206
Union Carbide	68	82	275	241

*After deducting all prior obligations at par. †Prior obligations exceed working capital. ‡After deducting minority interest. Before minority interest ratio is 105%.

International Match Corp.'s 1,350,000 shares of participating preference stock of $35 par value have been stricken from the list by the New York Stock Exchange.

N. Y. Curb Exchange members were warned recently by the secretary that certificates of the common stock of Worcester Salt, alleged to have been forged, had been introduced into the financial district.

Price Trend of Chemical Company Stocks

	Apr. 29	*May 6*	*May 13*	*May 20*	*1/4 1/8 27*	*Net Change*
Allied Chem	52 1/2	56 1/2	52 1/8	53 3/8	50 1/4	—2 1/4
Air Reduction	35 7/8	38 1/4	37	38 1/8	35 3/4	— 1/8
Anaconda	4 7/8	5 3/8	5	4 7/8	4	— 7/8
Columbian Carbon	21 7/8	20 3/4	18 1/2	19	15 7/8	—6
Com. Sol	6	6 1/2	5 3/4	5 1/4	2	—4
Du Pont	28	30 1/2	27 1/4	29 1/2	26 7/8	—1 1/8
Mathieson	12	11 1/4	11	10 7/8	9 1/4	—2 3/4
Monsanto	20 1/4	22	21	19 1/2	17 1/2	—2 3/4
Stand. N. J	22 5/8	25 1/2	23 7/8	25	23 7/8	+1 1/4
Texas Gulf	17 7/8	18 1/2	17	16 3/8	13 7/8	—4
U. S. I	20 1/2	19	17 1/4	15 7/8	13 7/8	—6 5/8

Foreign Markets

	April 29	May 31
London		
British Celanese	6s 3d	5s
Celanese	12s 6d	10s
Courtaulds	£1⅜	£1¼
Distillers	42s 6d	42s 3d
Imperial Chemical	14s	11s
Un. Molasses	5s	4s 4½d
Paris		
Kuhlmann	390	390
L'Air Liquide	690	630
Milan		
Montecatini	85¼ lire	80½
Snia Viscosa	120¾	100½
Italgas	12	10½
Berlin		
I. G. Farm	98rm	89

Solvay Investment Reports

N. Y. Stock Exchange has received notice that the security behind Solvay American Investment Corp. 15-year, 5% secured notes, series A, due 1942 is as follows: $200,687 cash; 380,758 shares of Allied Chemical common stock; 10,200 shares of American International common; 12,500 A. C. for participating debentures of Kreuger & Toll; 3,200 shares of Chase National Bank; 642 shares of Guaranty Trust capital stock; 100 shares of First National stock; $620,000 Solvay American Investment Corp. 5% secured gold notes, series A, 1942; and $280,000 U. S. Treasury 3⅛s due October 15, 1932.

On the basis of closing prices, May 27 the pledged collateral behind the 5% notes had a market value of $20,383,178, or slightly more than twice the $10,020,850 par amount of the notes outstanding last March 31.

Tubize Chatillon recapitalization approved by stockholders at a special meeting and an initial dividend of 1¾ per cent on the seven per cent preferred stock was declared. J. E. Bassill was elected president to succeed B. G. Slaughter.

American Asphalt Paint, Chicago, increased its preferred stock to $500,000 from $200,000 for purposes of general expansion.

United States Smelting, Refining recently purchased in the market 90,069 shares of its common and 12,753 preferred shares.

Dividends and Dates

Name	Div.	Stock Record	Payable
Alum. Industries	$ .12½	May 31	June 15
Amer. Home Prod.	.35	May 14	June 1
Amer. Smelt & Ref. 7% pf	$1.75	May 6	June 1
Amer. Smelt & Ref. 6%	1.50	May 6	June 1
Archer Daniels	.25	May 21	June 1
Atlas Powder	.25	May 31	June 10
Colgate-Palm. pf	1.50	June 10	July 1
Drug, Inc.	1.00	May 16	June 1
Du Pont, deb.	1.50	July 9	July 25
Du Pont, com.	.75	May 25	June 15
East. Kodak, com.	1.25	June 4	July 1
East. Kodak, pf	1.50	June 4	July 1
Freeport Texas	.50	May 13	June 1
Heyden Chem.	.25	May 20	June 1
Heyden Chem pf.	1.75	June 20	July 1
Internl Salt	.37½	June 15	July 1
Lehn & Fink	.50	May 16	June 1
Pennick & Ford	.25	May 28	June 13
P & G 5% pf.	1.25	May 25	June 15
Sherwin Williams pf	1.50	May 14	June 1
Socony-Vacuum	.20	May 6	June 15
Std. of Cal.	.50	May 16	June 15
Std. of Ind.	.25	May 16	June 15
Std. of N. J.	.25	May 16	June 15
Texas Gulf Sulfur.	.50	June 1	June 15
Westvaco Chlorine.	.25	May 16	June 1

Dividend Action

Monsanto Board of Directors declared the usual quarterly dividend of 31¼ cents per share in cash, payable July 1, 1932, to stockholders of record at the close of business on June 10.

Union Carbide directors reduced the common dividend from 50 cents quarterly to 30 cents, establishing an annual basis of $1.20 for the stock. Dividend is payable July 1 to stock of record June 3. This is the second reduction to be made, 65 cents quarterly having been paid until January of this year.

Hercules Powder declared a quarterly dividend of 50 cents on the common stock, payable June 25 to stock of record June 14. This places the stock on a $2 annual basis against $3 previously. The company reduced salaries 10 per cent effective July 1. All salaried employes will be placed on a 5-day week effective June 1.

Du Pont directors declared a quarterly dividend of 75 cents a share, placing the common stock on a $3 annual basis, as compared with $4 formerly.

Coincident with the lowering of the disbursement to stockholders, the management announced a 10 per cent reduction in the pay of salaried employees, effective June 1.

The declaration of the 75-cent payment met the expectation of the financial district, in so far as curtailment was concerned, but in general it had been thought that the rate might be lowered to $2 per year.

Mathieson directors on May 25 declared a quarterly dividend of 37½c per share on the common stock, no par value, payable July 1 to holders of record June 13. This compares with 50c per share paid each quarter from Jan. 1, 1930 to and incl. April 1, 1932.

Monroe Chemical declared regular quarterly dividend of 87½ cents on the preferred stock, payable July 1 to stock of record June 15.

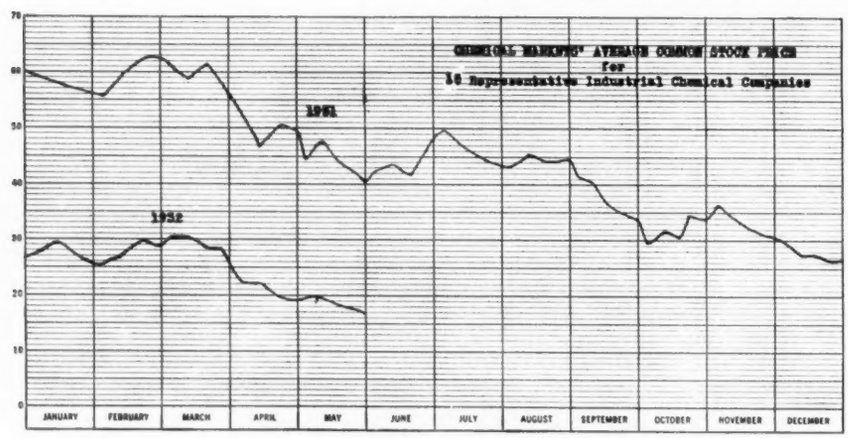
Heyden Chemical declared a dividend of 25 cents on the common stock, payable June 1 to stock of record May 20. Three months ago a similar dividend was paid. Regular quarterly dividend of $1.75 on the preferred also was declared, payable July 1 to stock of record June 20.

International Salt directors on May 18 declared a dividend of 37½c per share on the outstanding 240,000 shares of common stock, no par value, payable July 1 to holders of record June 15. This compares with quarterly distributions of 75c per share made from Oct. 1, 1930 to and incl. Jan. 2, 1932, and 50 cents per share paid on April 1 last. President Edward L. Fuller stated that salaries and wages in all departments had been substantially reduced, which, in addition to other economies, should be reflected in company's earnings.

Devoe & Raynolds omitted quarterly dividend of 15 cents a share on its Class A and B common stocks due at this time. The regular quarterly dividends of $1.75 on its first and second preferred stocks were declared payable July 1 to stock of record June 20.

Allied Chemical declared the regular quarterly dividend of $1.75 on the preferred, payable July 1 to stock of record June 10.

Agfa Ansco announced a plan during the month for refunding indebtedness, increasing working capital and readjusting capital structure.



Chemical common stock prices in 1932 have closely followed the trend of 1931. Will June show a recovery?

Over the Counter Prices

	Apr. 29, 1932 Bid	Apr. 29, 1932 Asked	May 31, 1932 Bid	May 31, 1932 Asked
J. T. Baker	9	13	9	13
Dixon	31	38	30	37
Merck, pfd	48	53	46	51
Petroleum Deriv.	2¼	5	2	4½
Solid C	2¼	3	2	2¾
Tubize B	32	38	32	38
Worcester Salt	80	85		70
Young, J. S.	70		70	
Young, J. S. pfd.	85		79	

Earnings at a Glance

Company	Annual Dividends	Net Income 1932	Net Income 1931	Common Share Earnings 1932	Common Share Earnings 1931
Air Reduction Co.					
Mar. 31, quarter	$3.00	$652,214	$1,019,040	$.77	$1.21
Amer. Com'l Alcohol:					
Mar. 31, quarter	f....	108,257	124,837	h.28	h.33
Archer-Daniels-Mid-land Co.:					
Mar. 31, quarter	gg...	213,553	*.....	.28	...
9 mos., Mar. 31	gg...	658,426	*.....	.87	...
Atlas Powder Co.:					
Mar. 31, quarter	hh...	†79,230	157,291	...	.04
Barnsdall Corp.:					
Mar. 31, quarter	f....	†390,125	1,658	...	...
Carman & Co.:					
Mar. 31, quarter	f....	20,782	46,143	b.03	b.35
Columbian Carbon:					
Mar. 31, quarter	3.00	277,954	560,501	h.51	h1.04
Certain-teed Products:					
Mar. 31, quarter	f....	†511,936	†233,892	...	...
Glidden Co.:					
Six months, April 30	f....	73,274	39,856	p.89	p.33
Hercules Powder					
Mar. 31 quarter	3.00	87,205	216,459	p.76	.03
Liquid Carbonic Corp.:					
12 months, Mar. 31	2.00	896,099	1,180,888	2.61	3.44
Monsanto Chem. Wks.:					
Mar. 31, quarter	1.25	275,859	255,378	.64	.59
Nat'l Distillers Prod.:					
Mar. 31, quarter	2.00	‡223,473	‡301,565	...	...
Newport Indust, Inc.:					
Mar. 31 quarter,	f....	†56,541	*.....	...	...
Union Carbide & Carb.:					
Mar. 31, quarter	2.00	1,981,439	4,613,670	.22	.51
United Carbon Co.:					
Mar. 31, quarter	f....	‡61,667	‡22,257	...	...
		1931	1930	1931	1930
Cleveland-Cliffs Iron:					
Year, Dec. 31	f....	†$21,360	$4,886,150	...	$5.14

fNo common dividends. hOn shares outstanding. ggLast declaration was designated as a 25c dividend. hhLast declaration was designated as a 50c dividend. bOn class B shares. †Net loss. pOn preferred stock. ‡Profit before federal taxes. *Not available.

Company Reports

Union Carbide & Carbon and subsidiaries report for quarter ended March 31, 1932, net income of $1,981,439 after taxes, depreciation, interest, preferred dividends of subsidiaries, etc., equivalent to 22 cents a share on 9,000,743 no-par shares of stock. This compares with $4,613,670 or 51 cents a share in first quarter of 1931.

Consolidated income account for quarter ended March 31, 1932, compares as follows:

	1932	1931	1930	1929
Net after tax	$4,015,779	$6,743,413	$8,755,165	$9,646,500
Int & Sub pf divs	307,804	311,017	308,440	309,752
Depr, etc	1,726,535	1,818,726	1,973,942	2,132,802
Net inc	$1,981,440	$4,613,670	$6,472,783	$7,203,946

Columbian Carbon Nets $277,954

Columbian Carbon and subsidiaries report for quarter ended March 31, 1932, net income of $277,954 after depreciation, depletion and federal taxes, equivalent to 51 cents a share on 538,420 shares of no-par stock. This compares with $560,501, or $1.04 a share on 536,395 shares in first quarter of 1931.

Consolidated income account for quarter ended March 31, 1932, compares as follows:

	1932	1931	1930	1929
Net aft fed tax	$600,775	$965,850	$1,254,976	$1,598,369
Depr & depl	350,280	408,652	390,038	466,566
Minority int	*27,459	*3,303	54,933	71,846
Net income	$277,954	$560,501	$810,005	$1,059,957

*Credit.

American Commercial Alcohol and subsidiaries report for quarter ended March 31, 1932, net profit of $108,257 after charges, depreciation and taxes, equivalent to 28 cents a share (par $10) on the 377,097 shares of capital stock which were outstanding at close of period, or 57 cents a share on 188,548 shares (par $20) of new stock which will presently be outstanding when all the old $10 par stock has been exchanged. In the first quarter of 1931, company reported net profit of $124,837, equal to 33 cents a share on 377,544 shares then outstanding.

United Carbon Shows Small Profit

United Carbon and subsidiaries report for quarter ended March 31, 1932, profit of $61,667 after depreciation and depletion, but before federal taxes, comparing with profit of $22,257 in first quarter of 1931.

Current assets as of March 31, 1932, including $454,612 cash, amounted to $3,446,526 and current liabilities were $996,322, comparing with cash of $770,036, current assets of $4,071,713 and current liabilities of $1,198,285 on March 31, 1931. Capital stock consists of 18,392 shares of 7% participating preferred and 368,885 no-par shares of common.

Consolidated income account for quarter ended March 31, 1932, compares as follows:

	1932	1931
Operating profit	.....	$184,732
Other income	.....	45,143
Total income	$230,745	$229,875
Depreciation and depletion	169,078	207,618
*Profit	$61,667	$22,257

*Before federal taxes.

Glidden and subsidiaries as of April 30, 1932, shows total assets of $32,181,908 compared with $34,198,477 on April 30, 1931, and surplus of $14,740,001 against $15,187,553. Current assets, including $1,757,404 cash, amounted to $11,958,935 and current liabilities were $872,977, comparing with cash of $2 394,733, current assets of $13,585,384 and current liabilities of $1,201,596 on April 30, 1931.

Consolidated income account for six months ended April 30, 1932, compares as follows:

	1932	1931	1930	1929
Oper income	$541,789	$454,311	$999,386	$1,741,748
Other income	*19,687	73,035	29,404	21,722
Total income	$522,102	$527,346	$1,028,790	$1,763,470
Depreciation	295,794	293,698	326,675	208,110
Interest	153,034	188,392	152,697	91,447
Federal tax	.....	5,400	64,400	171,900
Net profit	$73,274	$39,856	$486,018	$1,292,013

*Debit.

MacAndrews & Forbes for quarter ended March 31, 1932, shows net profit of $139,895 after expenses, federal taxes and company's proportion of results of operation of subsidiaries, equivalent after dividend requirements on 6% preferred stock, to 33 cents a share on 326,543 shares of no-par common stock. This compares with $217,826 or 56 cents a share on 335,700 common shares in first quarter of 1931.

Income account for quarter ended March 31, 1932, compares as follows:

	1932	1931	1930	1929
*Net profit	$139,896	$217,826	$255,763	$289,885
Pfd divs	31,242	31,500	31,500	31,500
Com divs	114,290	167,850	220,740	249,300
Deficit	$5,636	†$18,476	†$3,523	†$9,085

*After expenses, federal taxes and company's proportion of results of operation of subsidiaries. †Surplus.

Newport industries and subsidiaries report for quarter ended March 31, 1932, net loss of $56,541 after depreciation, interest and other charges, but exclusive of idle plant expense, amounting to $31,120, charged against reserve created for that purpose. In quarter ended December 31, 1931, net loss was $123,706, exclusive of $25,528 idle plant expenses.

Consolidated income account of Newport Industries, Inc., and subsidiaries for quarter ended March 31, 1932, follows: Sales, net $441,967; cost and expenses $466,229; loss $24,262; depreciation $52,020; interest and other charges, net $11,093; loss $87,375; profit on sale of stock $14,592; dividends $16,242; net loss (exclusive of idle plant expenses of $31,129 charged against reserve created for that purpose) $56,541.

Liquid Carbonic reports for 12 months ended March 31, 1932, net profit of $896,099 after charges and federal taxes, equal to $2.61 a share on 342,406 shares of capital stock. This compares with $1,180,888 in preceding 12 months equal on same basis, to $3.44 a share.

Nickel Earns Less Than 1 cent a Share

International Nickel of Canada, Ltd., and subsidiaries for quarter ended March 31, 1932, shows net profit of $536,072 after depreciation, depletion, interest and federal taxes, equivalent after dividend requirements on 7% preferred stock, to less than one cent a share on 14,584,025 no-par shares of common stock. This compares with $1,659,637 or eight cents a share on common in first quarter of 1931.

Current assets as of March 31, 1932, including $3,452,050 cash, government securities and demand loans, amounted to $29,107,814 and current liabilities were $3,104,057, comparing with cash, government securities, time and demand loans of $8,317,773, current assets of $35,586,808 and current liabilities of $6,266,126 on March 31, 1931.

Consolidated income account for quarter ended March 31, 1932, compares as follows:

	1932	*1931*	*1930*	*1929*
Earnings	$1,764,955	$3,238,406	$6,619,806	$7,391,660
Other income	2,712	15,975	297,133	469,048
Total inc	$1,767,667	$3,254,381	$6,916,939	$7,860,708
Expenses	276,461	374,494	447,271	527,729
Federal tax	65,372	145,910	582,958	748,698
Depr, depl, etc	803,931	954,476	1,144,788	889,839
Interest	85,831	119,864	125,778	104,251
Net profit	$536,072	$1,659,637	$4,616,144	$5,590,191
Pfd divs	483,485	483,484	483,475	589,876
Com divs	.....	2,186,792	3,438,877	2,749,147
Surplus	$52,587	*$1,010,639	$693,792	$2,251,168

*Deficit.

United Dyewood Corp. and subsidiaries for year ended Dec. 31, 1931, shows consolidated net income of $146,069 after depreciation, federal taxes, minority interest, etc., equivalent to $3.87 a share on 37,740 shares of 7% preferred stock outstanding at close of the year. This compares with net income in 1930, of $195,887 after depreciation, federal taxes, general reserves, other provisions and minority interest, equal to $5.06 a share on 38,700 shares of 7% preferred stock then outstanding.

Consolidated income account for year 1931, compares as follows:

	1931	*1930*	*1929*	*1928*
Oper. profit	$340,141	$575,985	$834,015	$932,802
Other inc	32,836	13,774	31,323	51,339
Total inc	$372,977	$589,759	$865,338	$984,141
Depreciation	98,574	138,243	150,829	121,773
Fed. tax	73,389	73,365	83,816	125,110
Misel. deduct	45,700	62,769	49,561	44,758
Genl. res	.....	19,575	22,644	28,363
Other approp	.....	86,324	97,356	114,414
Min. int	9,245	13,596	21,116	19,903
Net income	†$146,069	$195,887	$440,016	$529,820
7% pfd. divs	268,485	275,113	276,500	276,500
Deficit	$122,416	$79,226	*$163,516	*$253,320

*Surplus. †Includes income accounts of foreign subsidiary companies at rates of exchange prevailing December 31, 1931, but before revaluation of net foreign assets at current rates of exchange.

American Zinc, Lead & Smelting and subsidiaries for quarter ended March 31, 1932, shows net loss of $15,906 after taxes, interest, depreciation and depletion. This compares with net profit of $103,564, equivalent to $1.29 a share on 80,239 shares of $6 preferred stock in first quarter of 1931.

Consolidated income account and subsidiaries for quarter ended March 31, 1932, follows: Net sales $990,371; cost of goods sold $866,350; gross profit on sales $124,021; other income $4,981; total income $129,002; expenses $72,330; interest charges, less credits (net) $2,422; depreciation and depletion $75,000; net loss $15,906.

United Molasses Co., Ltd., in report for year ended Dec. 31, 1931, shows loss of £600,812 after depreciation of ships and equipment, cost of molasses run to waste, depreciated value of stock, and drawback and foreign tax claim. After adding £110,601 capital losses, resulting mainly from sale of 50% interest in Eastern Alcohol, there was a total loss of £711,413, which added to debit balance from 1930 to £64,260, makes a debit balance of £775,673 carried forward. In preceding year company reported profit of £229,074 after depreciation, directors' fees and other charges, but before providing for losses of subsidiaries.

Hercules Quarter Net 76 Cents

Hercules Powder reports for quarter ended March 31, 1932, net profit of $87,205 after depreciation, federal taxes, etc., equivalent to 76 cents a share on 114,241 shares of 7% preferred stock. This compares with $216,459, or 3 cents a share, on 606,234 common shares, in first quarter of 1931, after preferred requirements.

Income account for quarter ended March 31, 1932, compares as follows:

	1932	*1931*	*1930*	*1929*
Gross	$4,477,277	$5,140,930	$6,865,889	$8,438,926
*Net profit	87,205	216,459	731,535	939,046
Pfd divs	199,922	199,921	199,921	199,922
Com divs	.....	452,309	448,500	448,500
Deficit	.....	$435,771	†$83,114	†$290,624

*After depreciation, federal taxes, etc. †Surplus.

United Chemical 1931 Profit $282,225

United Chemicals, Inc., and subsidiaries, for year ended Jan. 2, 1932, was $282,225 after depreciation, federal taxes, minority interest, etc., comparing with $476,150 in year ended December 27, 1930.

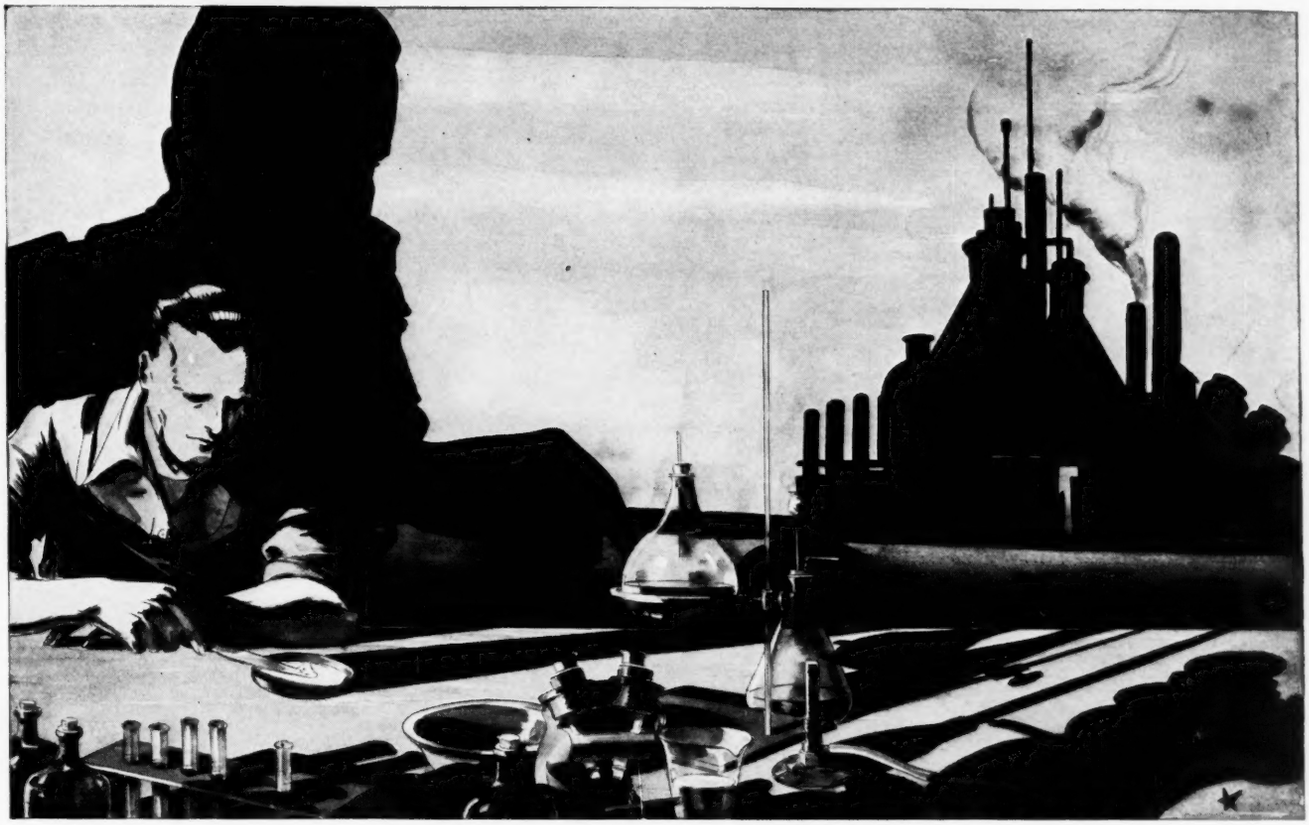
Years Ended—	*Jan. 2 '32*	*Dec. 27 '30*
Net sales	$5,089,549	$6,356,154
Cost of sales	3,111,020	4,107,484
Selling and administrative expenses	714,780	799,303
Other deductions, net	137,395	66,130
Depreciation	497,376	468,217
Provision for Federal taxes	86,874	99,897
Net profit for year	$542,103	$815,123
Portion of net prof. applic. to minority interest	259,877	338,972
Balance applic. to United Chemicals, Inc.	$282,226	$476,150
Dividends paid	315,838	345,450
Balance	def$33,612	$130,700
Earnings per share on common stock (no par)	Nil	$1.28

Is the Public Still Stock-minded?

Holders of common stocks have increased by more than 40 per cent, and holders of preferred stocks have increased only a negligible amount in the past two years, according to a survey of industries made by R. G. Dun & Co. There has been a decline of about four per cent in registered bondholders. In the chemical group the percentage of increase in holders of common stocks is greater than the average for the entire group, while the percentage of preferred stockholders is lower than the average. The following summaries compare the increases or declines in common stockholders in 31 groups.

Two-Year Comparison of Common Stockholders by Industries

Industry	*No Companies Reporting*	*Ratio to S. E. Market Value Arpil 1*	*Number of Stockholders*		*P. C. Increase*
			Two Years Ago	*Current*	
1 Agricultural machinery	4	92.1	32,936	49,734	51.1
2 Aircraft	4	76.1	44,082	55,847	26.7
3 Amusement	3	37.2	36,360	53,875	49.4
4 Apparel manufacturing	2	58.8	3,409	4,761	39.7
5 Automobile	12	94.6	376,823	574,357	52.5
6 Automobile accessory	13	38.7	67,697	83,184	22.9
7 Building	11	43.6	26,833	34,132	27.2
8 Business & office equipment	8	100.0	39,685	54,231	36.6
9 Chemical	**28**	**79.6**	**200,640**	**294,873**	**47.1**
10 Electrical equipment	6	96.6	163,847	209,298	27.8
11 Financial	1	17.2	6,463	10,012	55.0
12 Food	26	80.1	243,398	372,124	52.8
13 Foreign	7	44.9	88,970	139,780	45.4
14 Land—Realty—Hotels	1	16.8	4,347	6,919	59.3
15 Leath and shoe mfg	3	96.6	15,230	15,797	3.7
16 Mach. & eq. & metal mfg	28	40.2	78,111	109,929	40.7
17 Mining (excluding iron)	19	60.9	169,419	262,050	54.7
18 Miscellaneous	4	84.6	8,558	9,970	16.5
19 Paper and publishing	14	92.4	31,522	40,090	27.2
20 Petroleum	19	74.3	294,734	450,673	52.9
21 Railroad	21	56.7	567,027	646,841	14.1
22 Railroad equipment	9	68.2	78,221	87,814	12.3
23 Retail merchandising	30	84.9	136,144	239,522	75.9
24 Rubber goods and tires	4	47.0	60,774	76,134	25.2
25 Shipbuilding and operating	4	73.3	8,102	9,699	19.7
26 Shipping services	2	44.2	2,672	3,394	27.0
27 Steel—Iron—Coke	15	79.4	191,702	281,404	46.8
28 Textile	8	50.2	23,311	25,166	7.9
29 Tobacco	12	50.4	52,481	84,956	62.1
30 United States companies operating abroad	6	65.1	94,844	138,570	46.0
31 Utility	22	90.3	984,925	1,422,515	44.4
Total	346	76.6	4,133,267	5,847,651	41.5



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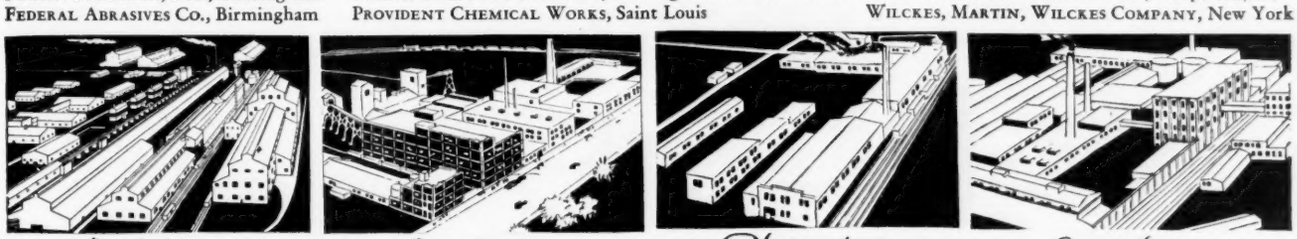


Anniston · · · St. Louis · · · Hoopeston · · · · · · · Camden · · ·

The Industry's Stocks

1932 May Last	1932 High	1932 Low	1931 High	1931 Low	Sales In May	Sales During 1932	ISSUES	Par $	Shares Listed	An. Rate	Earnings $-per share-$ 1931	Earnings $-per share-$ 1930
							NEW YORK STOCK EXCHANGE					
35¼	42	35⅛	62½	35¼	65,700	364,100	Air Reduction	No	830,000	$3.00	4.54	6.32
50	57	49	87½	49	369,200	2,004,200	Allied Chem. & Dye	No	2,401,000	6.00		9.77
104	105½	104	119	96½	2,900	10,000	7% cum. pfd.	100	393,000	7.00		
3¼	4½	3⅛	7½	3¼	2,300	13,600	Amer. Agric. Chem.	100	333,000		Yr. Je. '30	Nil
11¼	14	11	14	11	2,500	260,400	Amer. Com. Alc.	No	389,000			d1.27
28¼	37	28⅛	51⅜	28⅛	17,600	92,635	American Home Products	No	611,000	.35		
6⅜	9½	6½	18⅜	6¼	34,700	284,900	Amer. Smelt. & Refin.	No	1,830,000	4.00		3.77
35	45½	35	85	35	2,600	14,200	7% cum. pfd.	100	500,000	7.00		
...	...	...	...	...		76,200	Amer. Solvents & Chem.	No	503,000			d2.86
7	8¼	7	12	7	6,500	20,800	Archer Dan. Midland	No	550,000	2.00	Yr. Aug. 30	1.68
½	1	½	1⅛	½	19,700	126,300	Armour & Co.	No	50,000,000			
8	11¼	8	25⅛	8	2,900	17,200	Atlas Powder Co.	No	265,000	4.00	.59	2.67
52½	57½	52½	79½	52½	950	3,520	6% cum. pfd.	100	96,000	6.00		
2	3½	2	5	2	800	23,500	Celanese Corp. of America	No	1,000,000			
1	1½	1	3⅛	1	3,400	13,600	Certain-Teed Products	No	400,000			d7.61
8	8	8	15½	8	100	900	7% cum. pfd.	100	63,000			
13½	22	12¼	31½	12¼	82,500	121,400	Colgate-Palmolive-Peet	No	2,000,000	2.50		3.76
							Columbian Carbon	No	499,000	5.00		5.04
4¼	6¼	4½	10¼	4½	65,400	548,900	Comm. Solvents	No	2,530,000	1.00	.83	1.07
30	35¼	28¼	47¼	28¼	65,400	324,100	Corn Products	25	2,530,000	3.00		4.82
110	112¼	110	129½	104	630	3,330	7% cum. pfd.	100	250,000	7.00		
...	2½	1½	5½	1½	8,600	41,500	Davison Chem. Co.	No	504,000		Yr. Je. '30	4.00
7	10¼	7	13½	7	700	3,200	Devoe & Raynolds "A"	No	160,000	1.20		2.24
70	80	70	95	70	40	180	7% cum. 1st pfd.	100	16,000	7.00		
29½	39⅜	28	57	28	135,000	676,500	Drug, Inc.	No	3,501,000	1.00		
26⅜	31	25⅜	59½	25½	432,100	2,972,000	DuPont de Nemours	20	11,014,000	4.00	4.29	4.52
...	91	83½	105	83½	6,800	23,500	6% cum. deb.	100	978,000	6.00		
41½	50¼	39¼	87¼	39¼	146,100	670,200	Eastman Kodak	No	2,261,000	5.00		8.84
...	111	108	119	99	275	825	6% cum. pfd.	100	62,000	6.00		
10¼	15½	10¼	19½	10¼	31,625	154,525	Freeport Texas Co.	No	730,000	4.00	3.26	w4.77
3⅜	4⅜	3½	7	3½	4,000	31,100	Glidden Co.	No	695,000		Yr. Oct. '30	Nil
...	40	35¼	54	35	80	530	7% cum. prior pref.	100	74,000	7.00	Yr. Oct. '30	Nil
16	16	16	28½	16	500	5,300	Hercules Powder Co.	No	603,000	3.00	1.04	2.61
72	77	71	94¼	71	590	2,420	7% cum. pfd.	100	114,000	7.00		
12¼	25½	10½	38¼	10¼	28,200	149,500	Industrial Rayon	No	200,000	4.00		7.74
½	½	½	1½	¼	500	10,500	Intern. Agric.	No	450,000		Yr. Je. '30	1.68
4	4	4	7¼	3¼	800	4,000	7% cum. prior pfd.	100	100,000	7.00	Yr. Je. '30	14.58
½	¾	½	1¼	½	5,100	84,100	Intern. Combustion	No	1,049,513			
4	5⅜	3¼	7	3¼	133,700	876,500	Intern. Nickel	No	14,584,000	1.00		.67
11	16½	10½	23½	10½	4,100	33,900	Intern. Salt	No	240,000	3.00		
8	8½	8	10	8	1,400	13,300	Kellogg (Spencer)	No	598,000	0.80		h1.14
1-32	¼	1-32	9¼	1-32	201,500	3,703,800	Kreuger & Toll					
31½	35¼	30	56¼	30	22,800	282,700	Lambert	No	748,996	8.00		
8¼	15¼	6	24½	6	12,200	60,800	Lehn & Fink	No	419,166	3.00		
10¼	15⅜	10½	22	10½	15,900	53,800	Liquid Carbonic Corp.	No	342,000	4.00	2.96	5.22
1¼	2⅛	1¼	5½	1¼	12,700	76,100	McKesson & Robbins	No	1,073,000	1.00		.96
4½	6¼	4½	23	4¼	5,400	27,080	conv. 7% cum. pref.	50	428,180	3.50		
10	10½	10	15½	10	2,000	7,900	MacAndrews & Forbes	No	340,000	2.60		2.61
9½	12¼	9½	20¼	9¼	13,100	47,700	Mathieson Alkali	No	650,000	2.00	1.88	2.96
91	91	90	118	89¼	80	1,190	7% cum. pfd.	100	28,000	7.00		
17½	23¼	17½	30½	17½	7,400	54,300	Monsanto Chem.	No	416,000	1.25		1.71
15½	18⅜	14½	24½	14½	6,400	83,900	National Dist. Prod.	No	252,000	2.00	—	1.23
59	72	59	92	55¼	6,900	16,100	National Lead	No	310,000	5.00		7.58
...	104	99¼	125	99⅛	1,990	7,200	7% cum. "A" pfd.	100	244,000	7.00		
...	90	84	105	84	640	1,860	6% cum. "B" pfd.	100	103,000	6.00		
18	24	18	32½	18	10,400	54,900	Penick & Ford	No	425,000	1.00		4.01
28½	31½	27	42½	25½	35,200	342,900	Procter & Gamble	No	6,410,000	2.40	Yr. Je. '30	3.36
18½	20⅜	17½	27½	16¼	114,500	521,700	Standard Oil, Calif.	No	12,846,000	2.50		2.88
24⅜	26⅜	22¼	31½	19⅜	535,300	2,049,700	Standard Oil, N. J.	25	25,419,000	1.00		1.65
7⅜	8¼	7	10⅜	7	159,300	1,101,000	Standard Oil, N. Y.*	25	17,809,000	1.60		.92
1	1½	1	2⅜	1	6,000	21,600	Tenn. Corporation	No	857,000	1.00		1.21
14½	18⅜	13¼	26⅜	13¼	41,400	315,400	Texas Gulf Sulphur	No	2,540,000	4.00	3.52	5.50
17½	19½	16¼	36⅜	16½	269,800	1,431,300	Union Carbide & Carb.	No	9,001,000	2.60		3.12
7⅜	9	7⅜	14	7¼	3,500	46,400	United Carbon Co.	No	398,000		—	1.43
14¼	20½	13¼	31¼	13¼	61,800	548,500	U. S. Ind. Alc. Co.	No	374,000	6.00	—	z2.96
6½	8¼	5¼	18⅛	5¼	21,100	920,300	Vanadium Corp. of Amer.	No	378,000	3.00		2.95
½	1	½	1	½	3,800	856,200	Virginia Caro. Chem.	No	487,000		Yr. Je. '30	Nil
...	6½	4¼	4½	½	4,200	9,000	6% cum. part. pfd.	100	213,000		Yr. Je. '30	2.63
30½	36	23¼	39½	9	1,400	7,800	7% cum. prior pfd.	100	145,000	7.00	Yr. Je. '30	11.96
4¼	6	4	12¼	4	2,000	43,550	Westvaco Chlorine Prod.	No		2.00	1.79	2.51

h 11 mos. ending Aug. 30

w 13 mos.

z Before inventory adjustment

* Socony Vacuum

NEW YORK CURB

4¼	4½	4¼	6⅞	4¼	300	2,700	Acetol Prod. conv. "A"	No	60,000			
1	1	1	3	1	300	8,600	Agfa Ansco Corp.	No	300,000			
22½	28½	22¼	61½	22¼	6,200	59,050	Aluminum Amer.	No	1,473,000			z1.93
...	40½	34	67½	34	2,200	12,330	6% cum. pfd.	100	1,473,000	6.00		
2½	2½	2¼	5⅜	2¼	7,800	280,020	Amer. Cyanamid "B"	No	2,404,000			
...	...	...	⅜	¼		30,300	Anglo-Chilean Nitrate	No	1,757,000		Yr. Je. '30	Nil
...	...	...	1½	¾		1,200	Assoc. Rayon Corp.	No	1,200,000		Yr. Je. '30	1.87
...	...	...	...	...			conv. 6% cum. pfd.	100	200,000	6.00		
					15							
					4							
					60	32¼						

1932 May Last	1932 High	1932 Low	1932 High	1932 Low	1931 High	1931 Low	Sales In May	Sales During 1932	ISSUES	Par $	Shares Listed	An. Rate	Earnings $-per share-$ 1931	Earnings $-per share-$ 1930
⅞	1⅛	⅞	1¼	⅞	2⅛	¼	300	9,300	Brit. Celanese Am. Rcts	2.43	2,806,000			
25	25	25	25	12	81½	16½	25	3,025	Celanese 7% cum. part. 1st pfd	100	148,000	7.00		
25	25	25	42	22	65	25	25	4,125	" 7% cum. prior pfd	100	115,000	7.00		
1⅞	1⅞	1⅞	3	1⅞	...	...	100	1,550	Celluloid Corp.	No	195,000			
...	...	...	5½	5½	9	5½		300	Courtaulds, Ltd.	1£				
24	26⅛	24	35¼	24	51	30¼	700	2,300	Dow Chemical	No	630,000	2.00		3.44
6¼	6¾	6¼	8½	5⅜	13	6½	200	2,100	Heyden Chemical Corp.	10	150,000			
...	...	...	2⅞	2¼	3⅛	2⅜		200	Imperial Chem. Ind.	1£			1.21	
...	...	...	...	...	...	...			Monroe Chem.	No	126,000			
8	9½	8	...	...	60	20	1,100	1,100	Shawinigan W. & P.	No	2,178,000	2.50		
...	24⅛	23½	32½	22½	66¼	34½	300	2,925	Sherwin-Williams Co.	25	636,000	4.00	Yr. Aug. '30	4.14
⅜	⅜	⅜	1¼	⅛	12	⅜	1,600	18,600	Silica Gel Corp.	No	600,000			
17⅛	19½	15⅞	...	...	38¾	13½	134,180	281,580	Standard Oil Ind.	25	16,851,000	2.50		2.73
9	19½	9	18⅞	9	30⅛	14¼	86,600	141,650	Swift & Co.	25	6,000,000	2.00		2.08
...	2⅜	1⅛	5¼	1⅛	16	1⅛	4,900	41,600	Tubize "B"	No	600,000	10.00		
...	...	...	...	...	...	...			United Chemicals					
...	....	...	16¼	11½	...	...		2,600	$3 cum. part. pfd.	No	115,000	3.00		
									CLEVELAND					
...	...	...	27	27	...	...		50	Cleve-Cliffs Iron ,$5 pfd.	No	498,000	5.00		11.42
24½	27½	24½	36	24½	51½	30	1,239	5,830	Dow Chemical Co.	No	630,000	2.00		3.44
...	24½	21	35	21	68½	33⅞	1,398	11,748	Sherwin-Williams Co.	25	636,000	4.00	Yr. Aug. '30	4.14
									CHICAGO					
22⅞	24½	22¼	31⅜	22¼	39⅞	26½	700	4,350	Abbott Labs.	No	145,000	2.50		3.32
2½	5	2½	5	2½	5½	3	550	1,040	Monroe Chem.	No	126,000		1.21	1.09
22	23	21½	32½	21	33	24	340	1,360	$3.50 cum. pref.	No	30,000	3.50		
9½	14⅞	9¼	19	9¼	30⅜	16½	167,900	253,400	Swift & Co.	25	6,000,000	2.00		2.08
									CINCINNATI					
27¾	31½	26¾	42¾	25½	71	36⅞	6,575	61,930	Procter & Gamble	No	6,410,000	2.40	Yr. Je. '30	3.36
									PHILADELPHIA					
21¼	25	21¼	35	21¼	75	37½	50	150	Pennsylvania Salt	50	150,000	5.00	Yr. Je. '30	7.97

The Industry's Bonds

1932 May Last	1932 High	1932 Low	1932 High	1932 Low	1931 High	1931 Low	Sales In May	Sales During 1932	ISSUE	Date Due	Int. %	Int. Period	Out-standing $
									NEW YORK STOCK EXCHANGE				
66	74	66	80	66	99	69¼	41	81	Amer. Cyan. deb. 5s.	1942	5	A. O.	4,554,000
56	60	55	70½	55	102	52	337	1,415	Amer. I. G. Chem. conv. 5½s.	1949	5½	M. N.	29,933,000
75½	83	74	101½	74	104½	85¾	272	1,438	Am. Smelt & Ref. 1st. 5s. "A"	1947	5	A. O.	36,578,000
2½	3½	2½	12½	2	63½	7½	14	302	Anglo-Chilean s. f. deb. 7s.	1945	7	M. N.	14,600,000
93½	94½	91⅞	95½	85½	103	89	50	289	Atlantic Refin. deb. 5s.	1937	5	J. J.	14,000,000
31⅞	40	30⅜	60	30⅜	104	59	37	91	Interlake Iron Corp. 1st 5½s "A"	1945	5½	M. N.	6,629,000
...	103½	102⅔	103½	100⅜	105⅜	100	24	11	Corn Prod. Refin. 1st s. f. 5s.	1934	5	M. N.	1,822,000
1⅛	3½	⅞	14½	⅞	75½	6	94	1,464	Lautaro Nitrate conv. 6s.	1954	6	J. J.	32,000,000
71⅜	75½	71½	76	65½	96	67¾	106	515	Pure Oil s. f. 5½% notes	1937	5½	F. A.	17,500,000
...	72½	66	89	66	103	80	123	533	Solvay Am. Invest. 5% notes	1942	5	M. S.	15,000,000
100	101½	99½	102	99½	105½	98¼	680	4,761	Standard Oil, N. J. deb. 5s.	1946	5	F. A.	120,000,000
84	89½	84	93⅞	84	106½	85	273	1,165	Standard Oil, N. Y. deb. 4½s.	1951	4½	J. D.	50,000,000
41	60	40	83	40	99	45	33	401	Tenn. Corporation deb. 6s. "B"	1944	6	M. S.	3,308,000
									NEW YORK CURB				
83	86	82½	98⅞	82½	105½	93½	281,000	1,406,000	Aluminum Co., s. f. deb. 5s.	1952	5	M. S.	37,115,000
...	62½	55	74	55	104½	66	161,000	405,000	Aluminum Ltd., 5s.	1948	5	J. J.	20,000,000
...	20⅜	15	22	15	56	10	10,000	60,000	Amer. Solv. & Chem. 6½s.	1936	6½	M. S.	1,737,000
24	25	24	25	24	43	29	46,000	55,000	General Rayon 6s. "A"	1948	6	J. D.	5,085,000
...	94	91⅞	96	91½	103½	40½	300,000	1,041,000	Gulf Oil, 5s.	1937	5	J. D.	30,414,000
85¼	92½	85	95½	85	104	74	208,000	892,000	Sinking Fund deb. 5s.	1947	5	F. A.	35,000,000
51	68	51	88	51	102⅞	66	77,000	1,081,000	Koppers G. & C. deb. 5s.	1947	5	J. D.	23,050,000
55½	65⅜	52½	76	52½	98⅜	56	251,000	1,133,000	Shawinigan W. & P. 4½s. "A"	1967	4½	A. O.	35,000,000
...	65	54½	76	54½	98½	58	53,000	471,000	4½s., series "B"	1968	4½	M. N.	16,108,000
95½	100	95½	100¾	95½	104	99⅞	170,000	654,000	Swift & Co., 5s.	1944	5	J. J.	22,916,000
...	102	101½	102	99	104½	95	34,000	545,000	Westvaco Chlorine Prod. 5½s.	1937	5½	M. S.	1,992,000

Chemical Exports and Imports

U. S. Chemical Export Figures for March

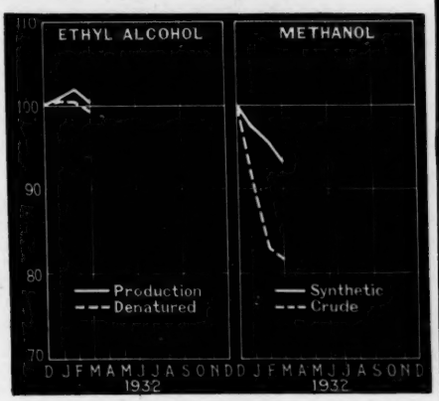
ARTICLES, AND COUNTRIES TO WHICH EXPORTED	UNIT OF QUANTITY	MARCH— 1931 Quantity	MARCH— 1931 Value	MARCH— 1932 Quantity	MARCH— 1932 Value	THREE MONTHS ENDING MARCH— 1931 Quantity	THREE MONTHS ENDING MARCH— 1931 Value	THREE MONTHS ENDING MARCH— 1932 Quantity	THREE MONTHS ENDING MARCH— 1932 Value
GROUP 8.—CHEMICALS AND RELATED PRODUCTS			$10, 174, 401		$6, 266, 130		$27, 177, 054		$19, 078, 745
A. COAL-TAR PRODUCTS			690, 567		891, 999		2, 595, 159		2, 240, 112
Benzol	Gal	134, 206	19, 808	321, 351	73, 335	3, 810, 548	721, 400	448, 675	94, 307
Crude coal tar	Bb. [1]	1, 536	5, 439	32, 597	74, 673	5, 811	23, 143	93, 288	216, 891
Coal-tar pitch	Ton	210	3, 968	22, 840	224, 629	8, 021	79, 278	50, 242	462, 906
Creosote oil	Gal	433, 739	53, 205	10, 859	2, 611	450, 203	57, 983	12, 914	3, 118
Coal-tar colors, dyes, stains, and color lakes	Lb.	2, 641, 367	543, 962	1, 975, 907	415, 312	7, 244, 989	1, 532, 163	4, 994, 103	1, 220, 148
Other coal-tar products, exclusive of medicinals	Lb.	737, 092	64, 185	4, 690, 975	101, 439	2, 007, 380	181, 192	5, 552, 384	242, 742
C. INDUSTRIAL CHEMICAL SPECIALTIES			1, 643, 343		870, 897		3, 758, 876		2, 387, 943
Nicotine sulphate (40% basis)	Lb.	30, 700	27, 775	35, 728	24, 807	139, 062	104, 371	54, 956	38, 641
Lead arsenate	Lb.	118, 956	12, 385	97, 185	7, 328	624, 382	66, 179	185, 256	15, 787
Calcium arsenate	Lb.	198, 120	10, 400	196, 344	8, 837	497, 760	26, 487	792, 580	32, 818
Other agricultural insecticides, fungicides, and similar preparations and materials	Lb.	774, 396	89, 013	638, 252	53, 845	1, 892, 479	209, 889	1, 335, 779	112, 070
Household insecticides and exterminators	Lb.	1, 154, 655	388, 190			2, 230, 677	702, 615		
Liquid	Lb.			193, 193	51, 690			678, 926	186, 558
Powdered or paste	Lb.			54, 788	26, 960			144, 123	52, 695
Household disinfectants, deodorants, germicides and similar preparations	Lb.	252, 920	26, 688	163, 766	15, 122	740, 637	99, 845	388, 924	40, 906
Baking powder	Lb.	452, 221	121, 286	221, 049	50, 580	1, 155, 004	336, 273	714, 443	178, 036
D INDUSTRIAL CHEMICALS			1, 919, 100		1, 384, 103		5, 118, 902		4, 095, 355
Acids and anhydrides—									
Organic (exclusive of coal-tar acids)	Lb.	60, 927	11, 443	18, 559	2, 929	118, 973	25, 305	116, 139	19, 036
Inorganic—									
Nitric	Lb.	294, 307	17, 821	26, 252	3, 036	336, 181	22, 636	73, 909	8, 836
Sulphuric	Lb.	200, 218	6, 618	376, 157	4, 922	879, 747	18, 837	914, 144	14, 646
Hydrochloric (muriatic)	Lb.	781, 998	13, 193	806, 753	11, 006	2, 256, 693	35, 700	2, 457, 343	35, 244
Boric (boracic)	Lb.	334, 362	15, 030	223, 327	12, 193	815, 769	40, 799	718, 227	36, 756
Other inorganic acids and anhydrides	Lb.	164, 708	14, 618	499, 088	22, 121	772, 588	55, 380	1, 877, 378	67, 414
Alcohols—									
Methanol	Gal.	30, 146	$13, 574	97, 940	$41, 658	93, 580	$45, 304	174, 027	$76, 256
Glycerol (glycerin)	Lb.	28, 627	3, 871	21, 223	2, 327	78, 204	10, 713	59, 796	6, 816
Butanol (butyl alcohol)	Lb.	70, 047	10, 212	137, 031	15, 668	296, 850	39, 190	263, 242	31, 280
Other alcohols	Lb.	271, 133	23, 268	82, 040	12, 762	289, 701	26, 627	301, 846	39, 605
Acetone	Lb.	179, 027	14, 489	505, 992	42, 322	708, 601	61, 455	1, 499, 720	111, 510
Carbon tetrachloride	Lb.	20, 707	1, 426	76, 759	3, 824	102, 389	5, 948	208, 283	9, 869
Carbon bisulphide	Lb.	190, 825	11, 725	210, 312	13, 385	453, 839	31, 120	628, 690	39, 610
Formaldehyde (formalin)	Lb.	223, 489	12, 779	263, 838	13, 218	836, 223	49, 757	900, 653	44, 557
Ethylene compounds	Lb.	30, 645	3, 507	21, 560	2, 640	132, 371	26, 143	122, 166	18, 557
Citrate of lime	Lb.	459, 590	58, 504	727, 765	47, 000	958, 314	122, 504	2, 118, 367	190, 775
Other synthetic organic products	Lb.	190, 710	37, 154	370, 439	55, 091	428, 921	74, 906	737, 652	119, 211
Nitro or aceto cellulose solutions, collodion, etc	Lb.	232, 477	51, 639	155, 801	31, 340	483, 873	120, 500	507, 225	95, 439
Ammonium compounds (except sulphate, phosphate, and anhydrous ammonia)	Lb.	129, 265	8, 960	65, 690	4, 224	366, 854	22, 649	140, 974	10, 300
Aluminum sulphate	Lb.	3, 909, 918	46, 682	3, 777, 410	38, 466	11, 508, 61	133, 118	9, 742, 740	103, 267
Other aluminum compounds	Lb.	90, 505	9, 142	187, 783	18, 564	574, 099	56, 431	352, 681	32, 603
Calcium compounds—									
Carbide	Lb.	513, 752	21, 815	358, 903	15, 069	784, 469	35, 076	972, 293	38, 827
Chlorinated lime (bleaching powder)	Lb.	91, 477	4, 120	258, 935	5, 272	301, 947	13, 615	439, 986	13, 235
Chloride	Lb.	1, 223, 337	13, 993	696, 164	7, 532	3, 174, 371	38, 697	1, 618, 000	17, 489
Other, except arsenate, cyanide, and nitrate	Lb.	158, 787	11, 462	38, 155	1, 157	336, 195	20, 461	216, 296	13, 164
Copper sulphate (blue vitriol)	Lb.	1, 192, 370	50, 925	434, 506	12, 091	3, 124, 710	128, 017	1, 226, 555	36, 245
Hydrogen peroxide (or dioxide)	Lb.	155, 538	29, 993	48, 707	8, 261	386, 464	71, 444	146, 071	22, 366
Potassium compounds (not fertilizers)	Lb.	153, 959	29, 823	197, 066	24, 341	398, 490	70, 835	425, 846	70, 982
Sodium compounds	Lb.	47, 682, 703	908, 364	37, 757, 975	710, 178	123, 921, 693	2, 603, 729	110, 618, 056	2, 137, 684
Bichromate and chromate	Lb.	392, 443	26, 370	231, 757	12, 304	899, 876	58, 710	1, 353, 681	75, 434
Cyanide	Lb.	63, 088	8, 120	64, 751	9, 329	291, 196	44, 345	204, 388	28, 713
Borate (borax)	Lb.	13, 332, 716	262, 423	18, 066, 975	318, 301	39, 759, 045	899, 010	50, 863, 791	910, 641
Silicate (water glass)	Lb.	4, 711, 088	43, 124	4, 728, 119	42, 524	13, 616, 332	125, 671	14, 283, 535	120, 827
Soda ash	Lb.	6, 460, 481	99, 224	2, 098, 373	37, 550	15, 707, 311	243, 454	5, 914, 808	105, 794
Sal soda	Lb.	896, 762	12, 457	576, 762	8, 210	2, 319, 216	30, 512	1, 636, 852	24, 463
Bicarbonate (acid soda or baking soda)	Lb.	1, 507, 401	25, 547	1, 174, 761	20, 491	4, 816, 162	88, 903	3, 704, 875	68, 245
Sulphate	Lb.	1, 758, 522	13, 481	396, 895	3, 296	3, 066, 466	27, 775	479, 251	5, 351
Bisulphate (niter cake)	Lb.	4, 239, 241	23, 852	106, 711	557	6, 854, 583	40, 937	285, 677	1, 314
Hydroxide (caustic soda)	Lb.	12, 881, 012	340, 010	9, 202, 955	208, 307	32, 718, 411	892, 457	28, 926, 615	666, 830
Sulphide	Lb.	140, 466	5, 410	49, 377	2, 625	334, 568	11, 196	133, 149	4, 914
Fluorides	Lb.	2, 440	269	1, 440	122	4, 865	350	44, 483	3, 659
Sodium phosphate (mono, di, or tri)	Lb.	354, 525	12, 303	548, 587	15, 717	1, 298, 961	42, 355	1, 483, 726	41, 551
Other sodium compounds	Lb.	942, 518	35, 774	510, 512	30, 845	2, 234, 701	98, 054	1, 303, 225	79, 948
Tin compounds	Lb.	54, 430	12, 149	55, 270	9, 124	195, 432	37, 472	171, 250	28, 293
Zinc compounds	Lb.	353, 198	13, 830	28, 916	3, 888	663, 608	26, 014	112, 558	10, 330
Gases, compressed, liquefied, and solidified—									
Ammonia, anhydrous	Lb.	376, 597	34, 351	80, 814	15, 084	791, 473	85, 949	365, 375	51, 293
Chlorine	Lb.	526, 928	14, 102	502, 503	14, 893	2, 154, 781	72, 730	2, 037, 712	54, 451
Other gases, n. e. s	Lb.	210, 989	23, 234	157, 817	31, 490	538, 756	80, 824	626, 121	81, 711
Other industrial chemicals			365, 284		127, 027		809, 017		407, 698
E. PIGMENTS, PAINTS, AND VARNISHES			1, 460, 349		1, 038, 071		4, 112, 965		2, 838, 420
Mineral earth pigments—									
Ocher, umber, sienna, and other forms of iron oxide for paints	Lb.	856, 434	23, 684	575, 536	34, 964	2, 247, 850	60, 371	2, 065, 333	71, 319
Other mineral-earth pigments (whiting, barytes, etc.)	Lb.	1, 319, 749	14, 656	1, 061, 996	12, 780	3, 500, 961	49, 408	2, 282, 067	28, 957

SOLVENT NEWS

VOL. I. No. 1 ★ A Monthly Service to Chemists and Executives of the Solvent-Consuming Industries ★ JUNE, 1932

SOLVENTS MOVE CHIEFLY ON CONTRACT IN CURRENT MARKETS

Trading in solvents during the last month has been largely of a routine nature with contract deliveries accounting for the greater part of the distributive movement. Spot transactions indicated a desire on the part of consumers to cover only actual requirements. In summary, the situation indicates that consumption has proceeded on a less-than-normal basis and production has been shaped accordingly.



SOLVENT PRODUCTION

(moving twelve-month average 1931 = 100)

ETHYL ALCOHOL		METHANOL	
Production	*1930*..111.0	Synthetic	*1930*...108.3
	1929..136.4		*1929*... 63.3
Denatured	*1930*..111.8	Crude	*1930*...149.1
	1929..139.5		*1929*...214.9

April export figures, just released, show there has been a marked gain in shipments of carbon bisulfide, carbon tetrachloride, acetone, and methanol. Shipments of benzene increased sharply in April but were down for the four-month period.

Call for esters gained in volume last month. Slower demand from the rayon trade is anticipated thruout June owing to the shutdown of viscose plants.

Reduced by-product coke production restricts output of benzene, toluene, xylene, and solvent naphtha and creates a firm price situation. Petroleum solvents and diluents were featured by a price decline in the midcontinent, but prices were unchanged in other sections.

	Year	Production
Amyl Acetate, 1000 lb.	*1930*	4,417
Amyl Alcohol (Fusel Oil), 1000 gal.	*1929*	391
Benzene, 1000 gal.	*1930*	19,918
Butyl Acetate, 1000 lb.	*1930*	35,456
Butyl Alcohol, 1000 lb.	*1929*	67,500
Carbon Bisulfide, 1000 lb.	*1929*	71,010
Carbon Tetrachloride, 1000 lb.	*1930*	34,298
Chloroform, 1000 lb.	*1930*	2,470
Ether, Ethyl, 1000 lb.	*1930*	8,699
Ethyl Acetate, 1000 lb.	*1930*	69,670
Ethyl Alcohol, 1000 pr. gal.	**1932**	**1931**
Production 1931, total	—	151,464
January-March	33,090	32,657
February	10,340	8,859
March	9,526	11,929
Denatured 1931, total	—	140,070
January-March	22,174	23,172
February	6,265	6,296
March	7,335	8,795
Ethylene Glycol, 1000 lb.	*1927*	11,723
Glycol Ethers, 1000 lb.	*1927*	1,079
Methanol, 1000 gal.	**1932**	**1931**
Crude 1931 total	—	3,235
January-March	732	1,472
February	230	466
March	295	483
Synthetic 1931 total	—	7,007
January-March	1,646	2,165
February	546	663
March	514	732
Methyl Acetone, 1000 lb.	*1929*	4,675
Solvent Naphtha and Xylene, 1000 gal.	*1930*	6,699

ALCOHOL PRICES RELEASED TO THE INDUSTRY FOR THIRD QUARTER

NO CHANGE FROM PRESENT LEVELS

Producers of industrial alcohol have announced their readiness to take on orders for delivery over the third quarter of the year at price levels prevailing in the second quarter. As is indicated in the accompanying graph showing production of solvents, there has been some curtailment in productive activities on the part of alcohol producers resulting in a reduction of inventories held by producers.

Consuming industries, for the most part, have been limiting shipping orders to their actual requirements and are carrying a very small surplus. This condition is favorable to an increased buying movement over the last half of the year. The favorable statistical situation, which may be inferred from a comparison of our tables representing solvent production and activities within the more important solvent-consuming industries, has exerted a steadying influence on sales prices.

The new price list makes no reference to alcohol for the anti-freeze trade. It is regarded as possible that developments in the Bureau of Industrial Alcohol may be followed by some changes in the denaturing formula for anti-freeze alcohol. The hesitancy in issuing a price schedule is due to uncertainty about denaturing costs.

ETHYL ACETO ACETATE DEMONSTRATES VERSATILITY

The properties of ethyl aceto acetate define it as an unusual chemical due to its structure which permits great latitude in reactions. This latter property proves of greatest value in the preparation of dyestuff and pharmaceutical intermediates. It is also well suited for organic synthesis and in the preparation of many organic compounds.

The manufacture of ethyl aceto acetate by the U. S. Industrial Chemical Co., Inc. since 1920 made possible the first domestic production of antipyrine, a sedative, as well as the manufacture of amidoantipyrine, or Pyramidon, widely used as an analgesic. The availability of ethyl aceto acetate also made possible American manufacture of certain Pyrazolone Dyes of outstanding properties and the important pigment color, Hansa Yellow.

The U.S.I.C. is the largest producer of ethyl aceto acetate. Rigidly enforced manufacturing standards assure purity and uniformity.

* * *

Substitute for Gum Tragacanth is now produced in Germany from water-soluble methyl cellulose.

* * *

Tombstones Renovated with Ethyl Acetate were discovered by a recent U. S. Industrial Chemical sales analysis. Exceptional results were reported from the use of this versatile solvent.

DU PONT OFFERS NEW WATERPROOF MATERIAL

Reports from Wilmington state that E. I. Du Pont de Nemours & Co. has developed a new lightweight waterproof material suitable for use in different branches of the textile industry. The new product, which will be sold under the name of "Doe-Tex," was developed as a result of research work by the Rubber Products Division of the company. It is described as similar to suede leather with a soft dull surface.

* * *

The Viscose Company has announced the shutdown of its rayon plant during June. Other viscose operations may follow suit, it is reported.

NEW LACQUER LINSEED OIL ANNOUNCED

The Archer Daniels Midland Company announces the perfection of a new lacquer linseed oil. It was developed in the company's research laboratory at Lehigh University after several years' study of the behavior of vegetable oils.

It is reported that the product, A.D.M. 100, may be used 50-50 with nitrocellulose and solvents. The resultant working qualities are claimed to be comparable with commercial lacquers, and earlier difficulties with the films, such as lifting and sweating, have been eliminated. The new lacquers are said to dry in the same time as nitrocellulose lacquers, finish well, stand up under ultra-violet, and show no change after hot alcohol-water immersion.

The new oil permits the use of formulae containing 50%-70% oil and eliminates the necessity for gums and plasticizers. A representative formula for a rubbing and polishing lacquer is quoted:

½" R. S. Cotton	56	Ethyl Acetate	106
Toluol	80	Ansol	37.2
Butanol	20	Ethyl Lactate	10
A.D.M. 100	46.8		

The same pigments may be used as in ordinary lacquers. Many all-purpose formulae already developed and samples of A.D.M. 100 are available at Minneapolis.

VOL. I. No. 1 ★ **SOLVENT NEWS** ★ JUNE, 1932

JUNE MARKS ANNIVERSARY OF ACT RELEASING TAX-FREE ALCOHOL TO INDUSTRY

Prior to June 7, 1906 the American Chemical Industry was hampered in its growth by traditionally heavy excise taxes on distilled spirits. On that date, the Tax-Free Denatured Alcohol Act was passed. Four months later, the U. S. Industrial Alcohol Co. was incorporated.

Following the passage of the Act, there was an instant spurt of alcohol production from 1,000,000 wine gallons in 1906, to 40,000,000 gallons in 1907—a forty-fold increase! The phenomenal expansion of the chemical industry is clearly traceable in the alcohol production statistics of the twenty-six years that have elapsed since the passage of the Act.

The new government booklet, "Facts Concerning Industrial Alcohol," will be of interest to solvent consumers. It briefly covers all salient facts regarding the utilization of alcohol as well as the functions of the Bureau of Industrial Alcohol.

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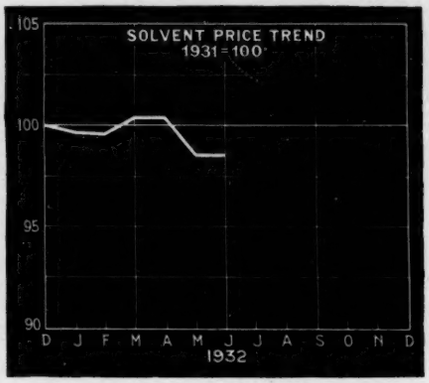
Atlantic Varnish Works, Inc., Richmond, Va., has been reorganized as the Atlantic Varnish and Paint Co.



SOLVENT PRICE TRENDS

The price index for solvents, based on the average of a representative group as of the first of each month, points to a lowering of values of approximately 2% in the last two months.

Lower quotations for amyl alcohol and amyl acetate were largely responsible. In the last month the market held a steady price position with the exception of some western markets for petroleum products.

This price index will be a monthly feature of *Solvent News*. It is the arithmetical average of a list of 36 solvents, based upon first-of-the-month reports of the New York market by a leading trade journal. The following solvents are included:

Acetic Ether
Acetone
Amyl Acetate (Fusel Oil)
Amyl Acetate (Pentane)
Amyl Acetate, Secondary
Amyl Alcohol (Fusel Oil)
Amyl Alcohol, Secondary

Benzene
Butyl Acetate
Butyl Acetate, Secondary
Butyl Alcohol
Butyl Alcohol, Secondary

Carbon Bisulfide
Carbon Tetrachloride
Chloroform

Diamyl Phthalate
Dibutyl Phthalate
Diethyl Phthalate
Dimethyl Phthalate

Ethyl Acetate
Ethyl Alcohol, Anhydrous Pure and Denatured
Ethyl Alcohol, Commercial Pure and Denatured
Ethyl Ether
Ethyl Lactate
Ethylene Glycol
Ethylene Glycol Monoethylether
Ethylene Glycol Monoethylether Acetate

Furfural
Fusel Oil, refined

Isopropyl Alcohol

Methanol, Crude
Methanol, Synthetic
Methyl Acetone

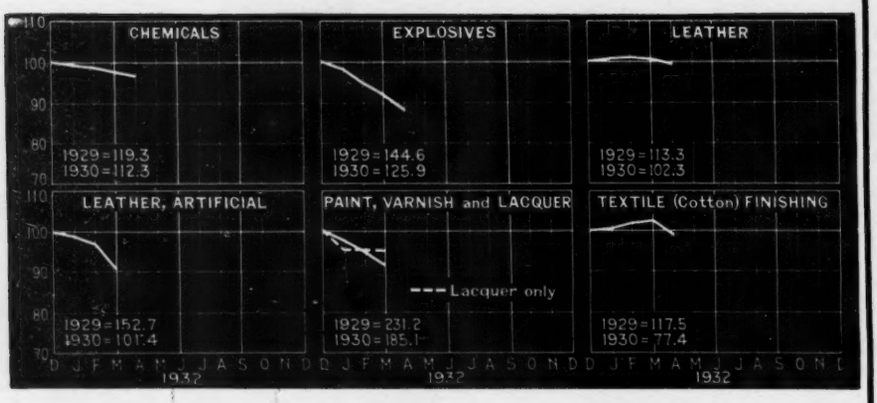
Naphtha, V.M.P.

Solvent Naphtha

Toluene

PRODUCTION IN MAJOR SOLVENT-CONSUMING INDUSTRIES

(moving twelve-month averages 1931 = 100)



	Year		Jan.-Apr.		March	April
Chemicals, production index	*1932*	—	98.1		97.8	96.5
	1931	100	101.4		104.8	106.3
Cosmetics and Perfumes, value,'000 omitted	*1929*	$193,440		*1927*	$161,245	
Drugs, value, '000 omitted	*1929*	$637,126		*1927*	$549,798	
Dyes and Coal-Tar Chemicals, 1000 lb	*1930*	431,825		*1929*	521,663	
Explosives,	*1932*		70,134		17,092	16,804
1000 lb	*1931*	303,408	99,458		25,414	27,646
Leather,	*1932*	—	96.7		100.1	97.9
production index	*1931*	100	98.5		102.3	112.1
Leather, Artificial,	*1932*	—	14,156*		5,098	—
pyroxylin spread, 1000 lb	*1931*	36,308	19,380*		8,162	8,546
Paint, Varnish, and Lacquer	*1932*	—	$51,547*		$19,382	—
sales, value, '000 omitted	*1931*	$188,206	$67,988*		$26,759	$22,600
Lacquers only,	*1932*	—	4,753*		—	—
1000 gal.	*1931*	22,595	5,681*		—	—
Plastics, Pyroxylin, 1000 lb	*1931*	16,000		*1930*	20,000	
Phenolic, 1000 lb	*1931*	25,500		*1930*	30,800	
Rayon, 1000 lb	*1931*	144,000		*1930*	119,000	
Textile (cotton) Finishing,	*1932*	—	310,666		93,145	57,894
1000 yd	*1931*	814,853	319,157		87,318	86,612

*January through March, only.

EXPLANATION

Every source known to us has been investigated in preparing all statistical material shown herein. Data has been secured from many responsible authorities, all impartial. While some are several years old and many known to be incomplete, all have been used which have a useful bearing on trends in production and consumption.

We will welcome any information which will enable us to perform this service more usefully and accurately. With access to these indices, it is hoped that solvent consumers will be enabled to follow activities in their own and related industries and trace the relationship between supply and demand among the major solvents.

ARTICLES, AND COUNTRIES TO WHICH EXPORTED	UNIT OF QUANTITY	MARCH—				THREE MONTHS ENDING MARCH—			
		1931		1932		1931		1932	
		Quantity	*Value*	*Quantity*	*Value*	*Quantity*	*Value*	*Quantity*	*Value*
Chemical pigments—									
Zinc oxide	Lb	1,039,123	71,123	297,210	23,057	3,353,851	235,518	1,002,831	74,876
Lithopone	Lb	862,310	40,960	904,481	35,133	2,178,909	99,385	2,430,409	98,979
Bone black and lampblack	Lb	265,452	10,835	192,447	10,844	706,748	31,611	382,677	23,941
Carbon black or gas black	Lb	6,608,110	389,904	7,926,046	382,215	20,808,646	1,266,150	22,508,491	1,074,349
Red lead, litharge, and orange mineral	Lb	2,005,449	119,271			2,948,072	184,776		
Red lead	Lb			91,328	4,820			220,542	13,481
Litharge	Lb			324,018	15,132			781,771	37,754
White lead	Lb	986,797	54,964			2,988,715	173,676		
Dry	Lb			65,948	2,696			1,572,745	72,041
In oil	Lb			241,713	16,667			351,439	26,656
Other chemical pigments	Lb	759,307	88,736	410,717	53,168	1,805,385	198,971	1,200,983	155,771
Bituminous paints, liquid and plastic			33,757		18,576		104,550		48,287
Paste paint	Lb	322,292	44,601	181,114	33,331	812,858	113,453	453,674	89,492
Kalsomine or cold-water paints, dry	Lb	692,221	34,154	388,236	20,017	1,736,640	87,987	1,398,109	73,272
Nitrocellulose (pyroxylin) lacquers—									
Pigmented	Gal	29,419	84,470	26,175	65,820	69,390	208,905	66,950	174,802
Clear	Gal	13,156	23,904	9,414	21,822	30,458	65,137	22,886	49,748
Thinners for nitrocellulose lacquers	Gal	26,830	33,942	20,172	22,920	75,017	95,943	54,574	63,304
Ready-mixed paints, stains, and enamels	Gal	156,110	324,918	120,126	219,675	471,266	970,489	288,995	556,554
Varnishes (oil or spirit, and liquid dryers)	Gal	37,225	63,882	36,060	42,893	107,434	159,195	84,559	100,773
Paint and varnish removers	Gal	1,673	2,588	1,694	1,541	5,180	7,440	3,450	4,064
F. FERTILIZERS AND FERTILIZER MATERIALS	Ton	112,725	1,530,925	75,732	429,950	310,792	3,882,378	253,338	2,579,619
Nitrogenous fertilizer materials—									
Ammonium sulphate	Ton	11,383	425,343	1,938	51,086	35,925	1,219,634	11,900	341,228
Other nitrogenous chemical materials	Ton	7,889	336,012	621	23,624	14,216	621,074	42,166	1,186,915
Nitrogenous organic waste materials	Ton	547	18,182	684	13,876	1,320	43,631	991	19,780
Phosphatic fertilizer materials—									
Phosphate rock—									
High-grade hard rock	Ton	2,926	14,489	5,618	35,090	3,181	17,402	26,446	151,944
Land pebble	Ton	79,460	342,857	65,856	266,229	221,398	943,935	165,224	696,196
Superphosphate (acid phosphate)	Ton	2,221	30,257	246	7,922	14,036	164,695	3,186	47,034
Other phosphate materials	Ton	75	4,653	142	8,532	1,916	73,564	468	23,198
Potassic fertilizer materials—									
Potassium chloride or muriate	Ton	4,121	185,744			6,836	308,535		
Other potash fertilizers	Ton	48	2,658	1	120	649	24,022	56	3,181
Concentrated chemical fertilizers—									
Nitrogenous phosphatic types	Ton	3,586	$151,663	545	$20,266	9,869	$415,297	2,665	$101,120
Nitrogenous phosphatic potassic types	Ton					20	554		
Prepared fertilizer mixtures	Ton	469	19,067	81	3,205	1,426	50,035	236	9,023

U. S. Chemical Import Figures for March

ARTICLES, AND COUNTRIES FROM WHICH IMPORTED	UNIT OF QUANTITY	MARCH—				THREE MONTHS ENDING MARCH—			
		1931		1932		1931		1932	
		Quantity	*Value*	*Quantity*	*Value*	*Quantity*	*Value*	*Quantity*	*Value*
GROUP 8.—CHEMICALS AND RELATED PRODUCTS			12,247,673		4,478,101		26,976,343		13,727,933
A. COAL-TAR PRODUCTS			1,067,135		781,675		2,728,992		2,221,634
Crude—									
Dead or cresote oil—free	Gal	2,677,004	273,909	1,646,635	154,572	10,043,196	999,624	5,472,906	517,646
All other—free			54,100		71,252		180,134		197,570
Intermediates—									
Acids—dut	Lb	100,982	6,050	174,605	16,667	261,738	16,799	301,584	96,053
All other—dut	Lb	58,052	51,345	67,120	30,548	203,610	114,082	210,870	111,169
Finished products—									
Colors, dyes, stains, color acids, and color bases, n. e. s—dut	Lb	517,287	623,095	423,984	434,291	1,077,567	1,280,174	1,063,398	1,150,070
Belgium	Lb	6,052	7,170	1,653	2,075	12,427	14,391	6,758	6,945
France	Lb	30,144	36,092	1,186	1,072	34,872	48,034	1,249	1,215
Germany	Lb	269,389	300,130	190,331	191,305	606,896	683,029	562,079	615,329
Italy	Lb	180	344			11,058	10,388	1,133	1,384
Switzerland	Lb	186,002	255,109	136,088	145,719	371,550	481,442	366,248	397,542
United Kingdom	Lb	19,786	17,609	11,727	12,738	28,937	28,309	39,437	42,873
Coal-tar medicinals—dut	Lb	6,456	16,859	1,929	30,525	16,796	50,008	5,590	54,517
Other finished coal-tar products—dut	Lb	10,959	41,777	11,545	43,820	25,790	88,171	26,145	94,609
B. MEDICINAL AND PHARMACEUTICAL PREPARATIONS			455,248		274,391		1,256,501		861,460
Quinine sulphate—free	Oz	212,192	89,896	42,524	14,753	388,192	152,737	183,224	61,986
Other quinine and other alkaloids and salts from cinchona bark—free	Oz	11,600	4,896	9,280	3,934	20,392	7,897	101,312	25,063
Other alkaloids, salts, and derivatives—dut			22,353		10,488		45,418		23,113
Antitoxins, serums, vaccines, etc., and blistering beetles—free			198		607		1,734		721
Menthol—dut	Lb	49,680	136,998	56,655	127,137	119,345	333,950	128,295	291,744
Santonin and salts—free	Lb					122	12,763		
Other medicinals—dut			3,319		5,472		33,331		15,094
All other preparations—dut			197,588		112,000		668,671		443,739
INDUSTRIAL CHEMICALS			1,964,181		1,282,640		4,577,117		3,949,767
Acetylene, butylene, ethylene, and propylene derivatives—dut	Lb	43,928	6,309	37,672	3,733	100,655	17,888	85,259	8,299
Acids and anhydrides—									
Acetic or pyroligneous—dut	Lb	1,971,400	95,880	1,298,800	74,584	4,297,260	215,655	3,290,776	174,255
Arsenious (white arsenic)—free	Lb	1,573,099	45,233	1,273,948	30,479	3,368,799	99,958	3,330,111	84,977
Formic—dut	Lb	11,111	753			22,222	1,642	11,134	623
Oxalic—dut	Lb	45,620	2,369	13,464	720	125,244	6,559	108,124	5,801
Sulphuric (oil of vitriol)—free	Lb	163,600	899	65,506	691	163,600	899	228,706	1,968
Tartaric—dut	Lb	139,016	28,904	57,680	8,824	609,307	133,985	527,860	92,043
All other—free	Lb					63,307	2,927	100	114
All other—dut	Lb	299,187	53,498	122,680	21,522	414,761	76,855	272,861	36,456

U. S. Chemical Import Figures (*Continued*)

ARTICLES, AND COUNTRIES FROM WHICH IMPORTED	UNIT OF QUANTITY	MARCH—				THREE MONTHS ENDING MARCH—			
		1931		1932		1931		1932	
		Quantity	*Value*	*Quantity*	*Value*	*Quantity*	*Value*	*Quantity*	*Value*
Alcohols, n. e. s., including fusel oil	dut.		288		708		1,425		981
Ammonium compounds, n. e. s.—									
Chloride (muriate)	dut.	Lb. 352,081	10,097	418,745	11,091	1,427,407	41,321	1,598,938	39,665
Nitrate	dut.	Lb. 658,003	20,373	498,198	13,112	1,683,093	50,504	1,649,975	43,352
All other	dut.	Lb. 55,200	2,922	10,840	546	176,709	10,218	36,413	2,092
Barium compounds	dut.	Lb. 1,087,069	20,294	88,342	2,436	2,096,941	39,664	283,727	6,480
Calcium compounds, n. e. s.	dut.	Lb. 50,000	1,875	50,000	1,875	208,720	8,055	50,000	1,875
Cellulose products, n. e. s.—									
Acetate	dut.	Lb. 2,362	2,880			5,317	7,178	477	520
All other—									
Sheets more than 3/1000-inch thick, and other forms	dut.	Lb. 23,073	36,664	4,611	4,297	46,061	66,118	26,367	15,768
Sheets and strips, more than 1 inch wide, not over 3/1000-inch thick	dut.	Lb. 2,057	942	718	714	21,348	9,913	8,314	6,247
Cobalt oxide	dut.	Lb. 24,615	$36,374	31,150	$31,015	46,595	$73,231	67,901	$68,453
Copper sulphate (blue vitriol)	free	Lb. 103,016	3,963	301,330	9,161	790,376	32,170	2,432,491	66,187
Glycerin—									
Crude	dut.	Lb. 1,062,217	59,084	614,526	23,511	2,914,104	166,795	1,710,157	71,307
Refined	dut.	Lb. 98,591	8,468	146,536	9,185	485,204	42,366	405,817	27,149
Iodine, crude	free	Lb. 21,006	77,121	22,702	75,320	80,202	297,472	72,692	241,712
Lime, chlorinated, or bleaching powder	dut.	Lb. 197,896	5,355	96,800	1,018	442,587	12,965	381,473	8,098
Magnesium compounds	dut.	Lb. 883,055	17,850	975,183	11,676	2,554,453	53,395	2,588,435	35,448
Potassium compounds, n. e. s.—									
Argols, tartar, and wine lees	free	Lb. 2,266,524	227,776	936,741	55,973	4,724,229	448,793	3,571,766	202,511
Carbonate	dut.	Lb. 2,255,683	101,590	1,147,862	46,955	4,009,021	184,390	2,632,349	106,460
Chlorate and perchlorate	dut.	Lb. 936,689	32,966	900,999	34,876	4,115,573	145,219	2,387,499	88,914
Cream of tartar	dut.	Lb.				36,400	6,676	5,500	705
Cyanide	free	Lb. 3,672	1,238	2,480	829	7,970	2,705	4,133	1,436
Hydroxide (caustic potash)	dut.	Lb. 1,185,608	64,019	581,786	29,589	2,161,958	112,339	1,454,716	76,844
Nitrate crude (saltpeter)	free	Ton. 2,007	108,790	1,104	65,505	5,507	255,288	6,893	358,051
Other potassium compounds, n. e. s.	dut.	Lb. 827,012	37,858	142,593	9,884	1,933,936	86,113	755,906	49,531
Sodium compounds, n. e. s.—									
Sulphate, crude (salt cake)	free	Lb. 13,397,702	70,502	8,176,719	48,154	38,724,648	210,617	30,724,258	171,995
Cyanide	free	Lb. 1,860,312	142,980	1,099,523	109,956	3,641,627	275,987	4,359,740	415,254
Ferrocyanide (yellow prussiate)	dut.	Lb. 285,195	24,799	15,547	1,334	517,898	44,389	88,465	7,537
Nitrate	dut.	Lb.		500	86			800	141
Phosphate (except pyrophosphate)	dut.	Lb. 42,462	937	1,192	51	291,949	4,896	15,280	396
Other sodium compounds	free					19,962	2,144		
	dut.		48,985		44,810		156,417		126,009
Radium salts	free	Grain. 48	177,289	58	194,504	52	194,703	94	318,017
Other industrial chemicals	free		187,521		163,163		486,066		518,273
	dut.		198,536		140,753		491,217		467,823
E. PIGMENTS, PAINTS, AND VARNISHES			148,747		98,912		435,343		376,986
Mineral earth pigments—									
Iron oxide and iron hydroxide	dut.	Lb. 946,712	19,894	951,309	11,856	2,135,795	52,500	2,420,110	41,366
Ochers and siennas	dut.	Lb. 417,768	9,063	631,131	9,873	1,954,499	39,019	2,021,625	30,824
Other mineral earth pigments	dut.		22,542		12,319		89,571		23,443
Chemical pigments—									
Lithopone and zinc pigments, n. e. s.	dut.	Lb. 650,955	27,036	470,046	13,945	2,353,355	91,900	3,183,069	93,976
Zinc oxide and leaded zinc oxide	dut.	Lb. 398,051	26,205	496,674	20,723	754,797	51,800	1,779,531	83,438
Other chemical pigments	dut.	Lb. 225,919	21,330	125,657	16,470	621,778	51,499	678,464	62,178
Paints, stains, and enamels	dut.		20,767		11,678		50,974		35,450
Varnishes	dut.	Gal. 767	1,910	733	2,048	3,991	8,080	2,897	6,311
F FERTILIZERS AND MATERIALS		Ton. 253,971	8,331,029	98,170	1,802,557	527,931	17,261,689	267,495	5,746,422
Nitrogenous—									
Ammonium sulphate	free	Ton. 6,757	235,718	24,630	522,134	25,419	926,692	63,049	1,397,740
Ammonium sulphate-nitrate	free	Ton. 543	25,723			1,487	69,047	75	3,784
Calcium cyanamide or lime nitrogen	free	Ton. 12,744	411,135	8,503	205,922	26,252	850,738	19,945	473,763
Calcium nitrate	free	Ton. 11,099	367,487	933	22,759	22,914	755,461	3,495	88,595
Guano	free	Ton. 1,414	43,428			5,482	183,440	3,233	52,479
Dried blood	free	Ton. 1,985	93,997	812	22,215	3,642	177,989	1,945	53,233
Sodium nitrate	free	Ton. 120,164	4,798,336	54	1,768	234,425	9,145,929	42,595	1,245,730
Urea and calurea	free	Ton. 780	59,076	257	20,214	2,665	215,308	1,782	131,921
Other nitrogenous	free	Ton. 13,167	465,678	2,905	57,237	22,695	702,933	5,266	101,061
Phosphates—									
Bone ash, dust, and meal, and animal carbon fertilizers	free	Ton. 6,285	144,219	4,162	64,209	16,216	383,126	11,530	203,912
Other phosphate materials	free	Ton. 8,873	114,286	10,074	127,542	8,947	115,609	13,578	173,664
Potash fertilizers—									
Chloride, crude (muriate)	free	Ton. 13,941	522,672	5,118	196,733	41,275	1,554,720	15,721	590,802
Kainite	free	Ton. 15,923	142,472	16,893	154,440	31,225	280,317	27,050	242,970
Manure salts	free	Ton. 25,739	360,782	17,604	226,445	51,844	766,953	40,746	510,151
Sulphate, crude	free	Ton. 4,670	224,182	2,075	100,576	11,380	533,243	6,100	280,243
Other potash-bearing substances	free	Ton. 121	1,013	144	1,115	155	1,232	191	1,484
Fertilizers, compounded, or chemically combined, containing nitrogen, phosphoric acid, and potash	free	Ton. 4,486	265,741	227	13,449	7,315	433,229	715	39,324
All other	free	Ton. 5,280	55,084	3,779	65,799	14,593	165,723	10,479	155,566
G. EXPLOSIVES			51,494		60,023		73,308		68,140
Powder and other explosives, n. e. s.	dut.		12		5,657		6,187		5,703
Firecrackers	dut.	Lb. 298,196	47,288	337,034	53,389	336,537	52,148	377,027	58,311
Fireworks and ammunition	dut.		4,194		977		14,973		4,126
H. SOAP AND TOILET PREPARATIONS			223,038		176,512		630,799		491,009
Soap—									
Castile	dut.	Lb. 134,664	14,254	76,466	6,328	660,888	63,614	465,993	40,805
Toilet	dut.	Lb. 129,665	28,511	106,168	25,357	326,184	82,511	246,819	62,673
All other	dut.	Lb. 136,769	12,726	139,435	12,261	357,740	39,802	480,094	37,831
Perfume materials	free	Lb. 421	37,167	878	28,253	1,747	98,865	1,909	78,863
	dut.		67,234		51,677		165,716		148,053
Perfumery, bay rum, and toilet water	dut.		31,136		33,970		96,299		66,076
Bath salts	dut.	Lb. 896	646	2,859	572	5,688	1,492	4,334	856
Cosmetics, powders, creams, etc.	dut.		31,364		18,094		82,500		55,852
I. ARTICLES IN GROUP 8, ORDINARILY DUTIABLE, IMPORTED FREE	free		6,801		1,391		12,594		12,515

Compiled from Monthly Summary of Foreign Trade of the United States, of the Dept. of Commerce

The Trend of Prices

Business shows few signs of improvement as the Country looks to Washington to balance the budget and to restore confidence. Chemical Markets' Average Price for 20 representative industrial chemicals holds at previous level; N. Y. Journal of Commerce's chemical index is lower; Annalist's index is slightly higher, while The National Fertilizer Association indices for fats and oils, chemicals and drugs, fertilizer materials, and mixed fertilizers are all lower.

Several important price reductions were announced last month. In the van was the expected decline in potash prices for the next fertilizer year. With the present mixing season about at an end, several items showed signs of weakness, including ammonium sulfate, dried blood, tankage, and fish scrap. Indications seem to point to lower nitrate prices for next season, although no official announcement has as yet been made, and it is unlikely that one will be given out for several weeks.

Tartaric Again Lower

Domestic producers of tartaric acid and cream of tartar again announced revised prices. Various grades of shellac went to new low levels as demand showed no signs of improvement. The situation in naval stores was rather contradictory, with turpentine slightly higher and most grades of rosin at new lows. Mercury turned weaker as did antimony. Tin quotations in primary markets and locally again declined with corresponding revisions in prices for tin crystals and tetrachloride.

Future Prices

Uncertainty surrounds the trend in alcohol.* Fall prices are expected momentarily. Stocks unquestionably have been accumulating rather rapidly, but, in some quarters, it was felt that this would not have any appreciable effect. Until a decision is rendered on the question of alleged "dumping" of ammonium sulfate there is little likelihood of any pronouncement from domestic producers. Rumors were heard about the possibility of higher naphthalene prices caused by higher raw material costs.

Strong Weakness

Fats and oils continue in the doldrums with quotations on practically every single item showing fresh weakness with each succeeding week. Apparently the bottom has not been reached and consumers are exhibiting no willingness to change their ideas on buying from hand to mouth. It is in this division that the greatest lack of stability now exists and the outlook for the immediate future is at least no better than conditions at the moment.

*Prices repeated for the third quarter.

Indices of the National Fertilizer Association show renewed declines in chemical and allied lines.

	Fats and Oils	*Chem. and Drugs*	*Fert. and Mat.*	*Mixed and Fert.*	*All Groups*
April 30...	41.6	87.9	71.5	74.3	61.9
May 7....	39.4	87.9	71.1	74.3	61.3
May 14...	38.3	87.9	70.0	71.9	60.9
May 21...	37.2	87.8	68.3	71.9	60.6
May 28...	36.6	87.8	67.5	71.9	60.3

The chemical index of the Annalist rose from 95.8 on April 26, to 96.2 on May 24, while the N. Y. Journal of Commerce's index declined from 81.9 on April 30, to 80.9 on May 28.

Demand from consuming industries was off in May from the level reached in April. Seasonal improvement was reported in but a few items, but shipments were below by a wide margin the same period a year ago. The distressing state of the textile industry remains unaltered. Tanning operations were curtailed further, little or no change was experienced by the paper industry, but some improvement appeared in the automobile field. The proverbial "summer dullness" is expected to further restrict tonnages for the next two months.

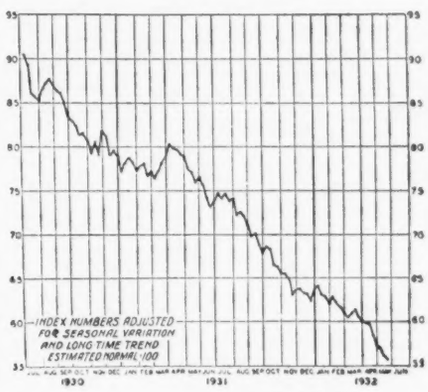
General Business

General business remained quiet in May. Here and there seasonal spurts in retail trade, spurred on usually by special "bargain sales," were reported, but the unsettled state of mind of those able to buy added to the several million whose incomes are completely at an end, acts as an almost unsurmountable barrier to any appreciable improvement. Wholesale trade has experienced as yet no revival. Collections in every section were painfully slow.

Awaiting the Turn

Commodity prices continued to decline. The chaotic condition of affairs in Washington has again affected the stock market adversely and sentiment generally remained at a low ebb. The country is now confronted with the trial of a presidentiial election. Favorable news has been at a premium for some time. However, America is carrying on firm in the belief that "It is always the blackest before the dawn." The difficulty appears to be for the nation to determine just which shade of black is the blackest.

The N. Y. Times index of business activity continues to reach new low levels each successive week.



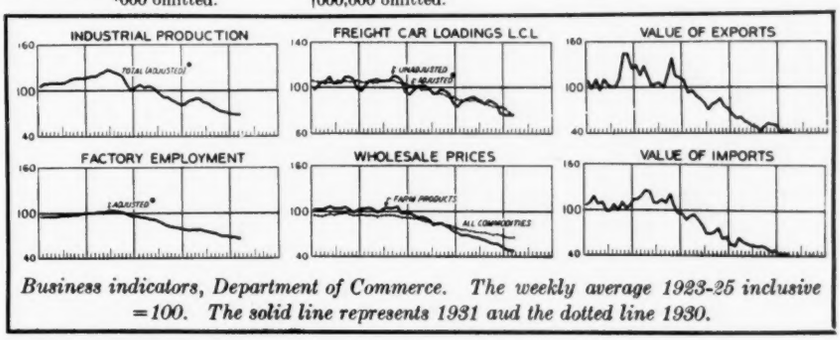
	Week Ending— May 21, 1932	*May 14, 1932*	*May 23, 1931*
Freight car loadings....	*51.5	52.4	75.4
Steel mill activity.....	28.5	26.3	51.1
Electric power prod.....	68.6	69.0	84.6
Automobile production.	41.5	40.7	70.5
Card, cotton cloth prod.	67.4	75.9	93.3
Combined index.....	*55.7	56.1	76.4

*Subject to revision.

Indices of Business

	Latest Available Month	Previous Month	Year Ago
Automobile Production, March	118,959	117,418	276,405
†Brokers Loans, May 25	$393	$414	$1,574
*Building Contracts, April	$121,704	$112,234	$336,925
*Car Loadings, May 14	517	533	747
†Commercial Paper, April 30	$108	$105	$307
Payrolls, March	52.3	53.6	74.9
*Mail Order Sales, Feb.	$32,581	$31,975	$39,422
Failures, Dun, April	$101,068	$93,760	$50,868
*Merchandise Imports, April	$127,000	$131,000	$185,706
*Merchandise Exports, April	$136,000	$156,000	$215,077
Furnaces in Blast, May 1	21.1	21.1	36.0
*Steel Orders, April 30	2,326	2,472	3,897

*000 omitted. †000,000 omitted.



Business indicators, Department of Commerce. The weekly average 1923-25 inclusive =100. The solid line represents 1931 and the dotted line 1930.

Prices Current

Heavy Chemicals, Coaltar Products, Dye-and-Tanstuffs, Colors and Pigments, Fillers and Sizes, Fertilizer and Insecticide Materials, Naval Stores, Fatty Oils, etc.

Chemical prices quoted are of American manufacturers for spot New York, immediate shipment, unless otherwise specified. Products sold f. o. b. works are specified as such. Imported chemicals are so designated. Resale stocks when a market factor are quoted in addition to makers' prices and indicated "second hands."

Oils are quoted spot New York, ex-dock. Quotations f.o.b. mills, or for spot goods at the Pacific Coast are so designated.

Raw materials are quoted New York, f. o. b., or ex-dock. Materials sold f. o. b. works or delivered are so designated.

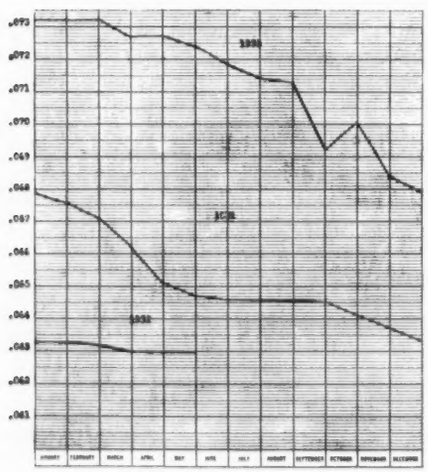
The current range is not "bid and asked," but are prices from different sellers, based on varying grades or quantities or both. Containers named are the original packages most commonly used.

Purchasing Power of the Dollar: 1926 Average—$1.00 - 1931 Average $1.404 - Jan. 1931 $1.283 - May 1932 $1.63

Important Price Changes

Advances	May	Apr.
Potassium Carb., 85% cal.	.04⅞	.04¾
Sandarac	.23½	.23
Turpentine	.45	.41¼
Declines		
Acid, tartaric	.23½	.24
Ammonium Sulfate, dom.	$24.00	26.00
Ammonium Linoleate	.11	.15
Antimony	.05	.05⅛
Blood, dried	1.40	1.50
Cream of Tartar	.18¾	.19¼
Japan Wax	.07¾	.08
Manure Salts 20%	12.00	12.65
Mercury Metal	64.00	68.00
Potassium Sulfate 90%	47.50	48.25
Shellac, Bone Dry	.16½	.19
Garnet	.15	.16
T. N.	.09½	.11
Sodium Metasilicate	2.85	3.25
Tankage, ground	1.40	1.50
Tin Crystals	.23	.23½
Tin Tetrachloride	.1555	.165

CHEMICAL MARKETS' Average Price



CHEMICAL MARKETS' Average Price for 20 representative industrial chemicals held in May at the level reached in April (.0630). The decline from January 1932 (.0633) is very slight and a glance at the accompanying chart indicates greater resistance on the part of prices in the last four months than at any other time since the beginning of the business depression.

Acetone — Demand in some quarters notably the motion picture industry was reported as being fair. Prices are unchanged from the previous levels.

Ethyl Acetate — An upward trend in automobile production was held responsible for the slightly better demand

	Current Market	1932 Low	1932 High	1931 High	1931 Low	1930 High	1930 Low
Acetaldehyde, drs 1c-1 wks. . . lb.	.18½	.18½	.21	.18½	.21	.21	.18½
Acetaldol, 50 gal dr. . . . . lb.	.27	.27	.31	.27	.31	.31	.27
Acetamide. . . . . lb.	.95	.95	1.35	.95	1.35	1.35	1.20
Acetanilid, tech, 150 lb bbl. . . lb.	.22	.22	.23	.22	.23	.23	.21
Acetic Anhydride, 92-95%, 100 lb cbys. . . . . lb.	.21	.21	.25	.21	.25	.29	.25
Acetin, tech drums. . . . . lb.	.30	.30	.32	.30	.32	.32	.30
Acetone, tanks. . . . . lb.	.....	.10	...	.10	.10	.10½	.12	.11
Acetone Oil, bbls NY. . . . . gal.	1.15	1.15	1.25	1.15	1.25	1.25	1.15
Acetyl Chloride, 100 lb cby. . . lb.	.55	.55	.68	.55	.68	.68	.55
Acetylene Tetrachloride (see tetrachlorethane).							
Acids							
Acid Abietic.	.12	.12	.12	.12	.12	.....	.....
Acetic, 28% 400 lb bbls c-1 wks. . . . . 100 lb.	.....	2.75	2.40	2.75	2.40	2.60	3.88	2.60
Glacial, bbl c-1 wk. . . . 100 lb.	.....	9.14	8.35	9.14	8.35	9.23	13.68	9.23
Glacial, tanks.	.....	8.89	8.10	8.89	8.10	8.98	13.43	8.98
Adipic.	.72	.72	.72	.72	.72	.....	.....
Anthranilic, refd, bbls. . . . . lb.	.85	.95	.85	.95	.85	.95	1.00	.85
Technical, bbls. . . . . lb.	.65	.70	.65	.70	.65	.80	.80	.75
Battery, cbys. . . . . 100 lb.	1.60	2.25	1.60	2.25	1.60	2.25	2.25	1.60
Benzoic, tech, 100 lb bbls. . . . lb.	.35	.45	.35	.45	.35	.45	.53	.40
Boric, powd, 250 lb. bbls. . . . . lb.	.0425	.05	.0425	.07	.06½	.07½	.07½	.06½
Broenner's, bbls. . . . . lb.	1.20	1.25	1.20	1.25	1.20	1.25	1.25	1.20
Butyric, 100% basis cbys. . . . lb.	.80	.85	.80	.85	.80	.85	.90	.80
Camphoric. . . . . lb.	.....	5.25	.....	5.25	.....	5.25	5.25	5.25
Chlorosulfonic, 1500 lb drums wks. . . . . lb.	.04½	.05½	.04½	.05½	.04½	.05½	.05½	.04½
Chromic, 99¾%, drs. . . . . lb.	.13	.13¾	.13	.14½	.14½	.17	.19	.15
Chromotropic, 300 lb bbls. . . . lb.	1.00	1.06	1.00	1.06	1.00	1.06	1.06	1.00
Citric, USP, crystals, 230 lb. bbls. . . . . lb.	.....	.32	.32	.33½	.33½	.43	.59	.40
Cleve's, 250 lb bbls. . . . . lb.	.52	.54	.52	.54	.52	.54	.54	.52
Cresylic, 95%, dark drs NY. gal.	.42	.47	.42	.47	.42	.60	.70	.54
97-99%, pale drs NY. . . . . gal.	.49	.50	.49	.50	.49	.60	.77	.58
Formic, tech 90%, 140 lb. cby. . . . . lb.	.10½	.12	.10½	.12	.10½	.12	.12	.10½
Gallic, tech, bbls. . . . . lb.	.60	.70	.60	.70	.60	.70	.55	.50
USP, bbls. . . . . lb.	.....	.74	.....	.74	.....	.74	.74	.74
Gamma, 225 lb bbls wks. . . . . lb.	.75	.77	.75	.80	.77	.80	.80	.77
H, 225 lb bbls wks. . . . . lb.	.60	.65	.60	.65	.60	.70	.70	.65
Hydriodic, USP, 10% soln cby lb.	.....	.67	.....	.67	.....	.67	.67	.67
Hydrobromic, 48%, coml, 155 lb cbys wks. . . . . lb.	.45	.48	.45	.48	.45	.48	.48	.45
Hydrochloric, CP, see Acid Muriatic.						.....	.....
Hydrocyanic, cylinders wks. . lb.	.80	.90	.80	.90	.80	.90	.90	.80
Hydrofluoric, 30%, 400 lb bbls wks. . . . . lb.	.....	.06	.....	.06	.....	.06	.06½	.06
Hydrofluosilicic, 35%, 400 lb. bbls wks. . . . . lb.	.11	.12	.11	.12	.11	.12	.12	.11
Hypophosphorous, 30%, USP, demijohns. . . . . lb.	.....	.85	.....	.85	.....	.85	.85	.85
Lactic, 22%, dark, 500 lb bbls lb.	.04	.04½	.04	.04½	.04	.04½	.05	.04
44%, light, 500 lb bbls. . . . lb.	.11½	.12	.11½	.12	.11½	.12	.12	.11
Laurent's, 250 lb bbls. . . . . lb.	.36	.42	.36	.42	.36	.42	.42	.36
Linoleic. . . . . lb.	.16	.16	.16	.16	.16	16	.....	.....
Malic, powd, kegs. . . . . lb.	.45	.60	.45	.60	.45	.60	.60	.45
Metanilic, 250 lb bbls. . . . . lb.	.60	.65	.60	.65	.60	.65	.65	.60
Mixed Sulfuric - Nitric.								
tanks wks. . . . . N unit	.07	.07½	.07	.07½	.07	.07½	.07½	.07
tanks wks. . . . . S unit	.008	.01	.008	.01	.008	.01	.01	.008
Monochloroacetic, tech bbl. . . lb.	.20	.30	.20	.30	.20	.30	.30	.18
Monosulfonic, bbls. . . . . lb.	1.65	1.70	1.65	1.70	1.65	1.70	1.70	1.65
Muriatic, 18 deg, 120 lb cbys c-1 wks. . . . . 100 lb.	.....	1.35	.....	1.35	.....	1.35	1.35	1.35
tanks, wks. . . . . 100 lb.	.....	1.00	.....	1.00	.....	1.00	1.00	1.00
20 degrees, cbys wks. . . 100 lb.	.....	1.45	.....	1.45	.....	1.45	...	1.45
N & W, 250 lb bbls.	.85	.95	.85	.95	.85	.95	95	.85
Naphthionic, tech, 250 lb.	.60	.65	.60	.65	.60	.65	Nom.	.....
Nitric, 36 deg, 135 lb cbys c-wks. . . . . 100 lb.	.....	5.00	.....	5.00	.....	5.00	5.00	5.00
40 deg, 135 lb cbys, c-1 wks. . . . . 100 lb.	.....	6.00	.....	6.00	.....	6.00	6.00	6.00
Oxalic, 300 lb bbls wks NY. . . . lb.	.11	.11½	.11	.11½	.10¾	.11½	.11¾	.11
Phosphoric 50%, U. S. P. . . . lb.	.....	.14	.....	.14	.....	.14	.14	.14
Syrupy, USP, 70 lb drs. . . . lb.	.....	.14	.....	.14	.....	.14	.14	.14
Commercial, tanks. . . . . Unit	.....	.80	.....	.80	.....	.80	.80	.80
Picramic, 300 lb bbls. . . . . lb.	.65	.70	.65	.70	.65	.70	.70	.65
Picric, kegs. . . . . lb.	.30	.50	.30	.50	.30	.50	.50	.30
Pyrogallic, crystals. . . . . lb.	1.50	1.60	1.50	1.60	1.50	1.60	1.60	1.30
Salicylic, tech, 125 lb bbl. . . . lb.	.33	.37	.33	.37	.33	.37	.37	.33
Sulfanilic, 250 lb. bbls. . . . . lb.	.14½	.15	.14½	.16	.15	.16	.16	.15
Sulfuric, 66 deg, 180 lb cbys 1c-1 wks. . . . . 100 lb.	1.60	1.95	1.60	1.95	1.60	1.95	1.95	1.60
tanks, wks, ton	.....	15.00	.....	15.00	.....	15.00	15.50	15.00
1500 lb dr wks. . . . . 100 lb.	1.50	1.65	1.50	1.65	1.65	1.50	1.65	1.50
60°, 1500 lb dr wks. . . . 100 lb.	1.27½	1.42½	1.27½	1.42½	1.42½	1.27½	1.42½	1.27½

Prices Current and Comment

Purchasing Power of the Dollar: 1926 Average—$1.00 - 1931 Average $1.404 - Jan. 1931 $1.283 - May 1932 $1.63

for immediate shipments. Sales of lacquers during the first quarter of 1932 totaled 4,753,174 gallons, compared with 5,681,409 gallons in the corresponding quarter of 1931 and 6,612,595 gallons in the first quarter of 1930, according to preliminary reports received by the Bureau of Census from 116 identical manufacturers. Sales of finished lacquer in the first quarter of 1932 were 2,341,472 gallons, against 2,891,424 gallons in the corresponding period of last year.

	Total Sales	
1932	*Gallons*	*Value*
First quarter‡	4,753,174	7,172,404
1931		
First quarter	5,681,409	9,638,796
Second quarter	6,781,765	11,009,856
Third quarter	5,504,853	8,701,893
Fourth quarter†	4,626,591	7,273,177
Totals, year	22,594,618	36,623,722
1930		
First quarter	6,612,595	11,811,029
Second quarter	7,109,769	12,864,322
Third quarter	6,121,824	11,322,250
Fourth quarter	5,122,551	9,160,484
Totals, year	24,966,739	45,158,085
	Finished Lacquer	
1932	*Gallons*	*Value*
First quarter‡	2,341,472	4,820,678
1931		
First quarter	2,891,424	6,648,495
Second quarter	3,339,912	7,530,840
Third quarter	2,757,695	5,868,409
Fourth quarter†	2,379,764	5,047,328
Totals, year	11,368,795	25,095,072
1930		
First quarter	3,426,635	8,131,822
Second quarter	3,765,108	8,965,825
Third quarter	3,259,649	7,789,667
Fourth quarter	2,791,428	6,471,616
Totals, year	13,242,820	31,358,930
	Lacquer Thinners	
1932	*Gallons*	*Value*
First quarter‡	2,159,857	2,010,186
1931		
First quarter	2,568,023	2,612,622
Second quarter	3,146,378	3,026,400
Third quarter	2,482,221	2,439,965
Fourth quarter†	2,039,637	1,912,739
Totals, year	10,236,259	9,991,726
1930		
First quarter	2,873,013	3,218,056
Second quarter	3,032,424	3,426,502
Third quarter	2,602,667	3,087,485
Fourth quarter	2,109,987	2,329,305
Totals, year	10,618,091	12,061,348
	Dopes*	
1932	*Gallons*	*Value*
First quarter‡	251,845	341,540
1931		
First quarter	221,962	377,679
Second quarter	295,475	452,616
Third quarter	264,937	393,519
Fourth quarter†	207,190	313,110
Totals, year	989,564	1,536,924
1930		
First quarter	312,947	461,151
Second quarter	312,237	471,995
Third quarter	259,508	445,098
Fourth quarter	221,136	359,563
Totals, year	1,105,828	1,737,807

*Does not include base solutions used in the manufacture of lacquers.
†Revised.
‡Preliminary.

Acid Nitric — The price situation in this commodity has remained stable for a long period of time. Production has been radically reduced to meet current needs. There has been no official survey of nitric acid consuming industries in the U. S. but production by strengths, industries, and states, reported to the Bureau of Census serves as a guide to major consuming channels inasmuch as

	Current Market	1932 Low	1932 High	1931 High	1931 Low	1930 High	1930 Low
Oleum, 20%, 1500 lb. drs 1c-1 wks ton	.....	18.50	.....	18.50	.....	18.50	18.50	18.50
40%, 1c-1 wks net ton	.....	42.00	.....	42.00	.....	42.00	42.00	42.00
Tannic, tech, 300 lb bbls lb.	.23	.40	.23	.40	.23	.40	.40	.23
Tartaric, USP, gran. powd, 300 lb bbls lb.	.23½	.24	.23½	.25½	.25½	.29½	.38½	.33
Tobias, 250 lb bbls lb.	.80	.85	.80	.85	.80	.85	.85	.85
Trichloroacetic bottles lb.	.....	2.75	.....	2.75	.....	2.75	2.75	2.75
Kegs lb.	.....	2.00	.....	2.00	.....	2.00	2.00	2.00
Tungstic, bbls lb.	1.40	1.70	1.40	1.70	1.40	1.70	1.70	1.40
Albumen, blood, 225 lb bbls lb.	.38	.40	.38	.40	.38	.40	.40	.38
dark bbls., lb.	.12	.20	.12	.20	.12	20	.20	.12
Egg, edible lb.	.75	.78	.75	.90	.55	.60	.75	.55
Technical, 200 lb cases lb.	.62	.66	.62	.66	.48	.66	.73	.50
Vegetable, edible lb.	.60	.65	.60	.65	.60	.65	.65	.60
Technical lb.	.50	.55	.50	.55	.50	.55	.55	.50
Alcohol								
Alcohol Butyl, Normal, 50 gal drs c-1 wks lb.	.....	.123	.123	.1595	.1495	.17½	.18½	.17½
Drums, 1-c-1 wks lb.	.....	.128	.128	.1645	.1545	.17½	.18½	.17½
Tank cars wks lb.	.....	.113	.113	.143	.143	.16½	.17½	.16½
Amyl (from pentane) Tanks wks lb.	.....	.176	.176	.203	.203	.236	.236	.236
Diacetone, 50 gal drs del gal.	1.42	1.60	1.42	1.60	1.42	1.60	1.60	1.42
Ethyl, USP, 190 pf, 50 gal. bbls gal.	2.55	2.65	2.55	2.65	2.37	2.75	2.75	2.63
Anhydrous, drums gal.	.54	.58	.54	.58	.54	.60	.71	.56
No. 5, *188 pf, 50 gal. drs. drums extra gal.	.....	.34½	.....	.34½	.27	.44	50	.40
*Tank, cars gal.	.....	.30½	.....	.30½	.24	.38	.48	.37
Isopropyl, ref, gal drs gal.	.60	.65	.60	.65	.60	1.00	1.00	.60
Propyl Normal, 50 gal dr. gal.	.....	.75	.....	.75	.....	1.00	1.00	1.00
Alcotate, tanks gal.	.....	.60	.....	.60	.60	.60	.....	.....
Aldehyde Ammonia, 100 gal drlb.	.80	.82	.80	.82	.80	.82	.82	.80
Alpha-Naphthol, crude, 300 lb. bbls lb.	.57	.58	.57	.65	.60	.65	.65	.60
Alpha-Naphthylamine, 350 lb. bbls lb.	.32	.34	.32	.34	.32	.34	.34	.32
Alum Ammonia, lump, 400 lb. bbls, 1-c-1 wks 100 lb.	3.00	3.25	3.00	3.25	3.00	3.50	3.50	3.20
Chrome, 500 lb casks, wks 100 lb.	4.50	5.25	4.50	5.25	4.50	5.25	5.25	4.50
Potash, lump, 400 lb casks wks 100 lb.	3.00	3.50	3.00	3.50	3.00	3.50	3.50	3.10
Soda, ground, 400 lb bbls wks 100 lb.	3.50	3.75	3.50	3.75	3.50	3.75	3.75	3.50
Aluminum Metal, c-1 NY. 100 lb.	22.90	24.30	22.90	24.30	22.90	24.30	24.30	24.30
Chloride Anhydrous lb.	.05	.09	.05	.09	.05	.09	.15	.05
Hydrate, 96%, light, 90 lb. bbls lb.	.16	.17	.16	.17	.16	.17	.18	.16
Stearate, 100 lb bbls lb.	.20	.21	.20	.21	.18	.22	.26	.1
Sulfate, Iron, free, bags c-1 wks 100 lb.	1.90	1.95	1.90	1.95	1.90	1.95	2.05	1.9
Coml, bags c-1 wks 100 lb.	1.25	1.30	1.25	1.30	1.25	1.30	1.40	1.25
Aminoazobenzene, 110 lb kegs lb.	.....	1.15	.....	1.15	.....	1.15	1.15	1.15
Ammonium								
Ammonia anhydrous Com. tanks	.....	.05½	.....	.05½	.....	.05½	.05½	.05½
Ammonia, anhyd. 100 lb cyl. lb.	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½
Water, 26°, 800 lb dr del lb.	.02¾	.03	.02¾	.03	.02¾	.03½	.03½	.03½
Ammonia, aqua 26° tanks	.....	.02¾	.....	.02¾	.02¾	.02¾	.02¾	.02¾
Acetate lb.	.28	.39	.28	.39	.28	.39	.39	.28
Bicarbonate, bbls., f.o.b. plant 100 lb.	.....	5.15	.....	5.15	.....	5.15	5.15	5.15
Bifluoride, 300 lb bbls lb.	.21	.22	.21	.22	.21	.22	.22	.21
Carbonate, tech, 500 lb cs. lb.	.10½	.12	.10½	.12	.09	.12	.12	.09
Chloride, white, 100 lb. bbls wks 100 lb.	3.45	5.15	4.45	5.15	4.45	5.15	5.15	4.45
Gray, 250 lb bbls wks lb.	5.25	5.75	5.25	5.75	5.25	5.75	5.75	5.25
Lump, 500 lb cks spot lb.	.11	.11½	.11	.11½	.11	.11½	.11½	.11
Lactate, 500 lb bbls lb.	.15	.16	.15	.16	.15	.16	.16	.15
Ammonium Linoleate lb.	.....	.11	.11	.15	.15	.....	.....	.....
Nitrate, tech, casks lb.	.06	.10	.06	.10	.06	.10	.10	.06
Persulfate, 112 lb kegs lb.	.25	.27½	.25	.27½	.25	.30	.30	.26
Phosphate, tech, powd, 325 lb. bbls lb.	.11½	.12	.11½	.12	.11½	.12	.13	.11½
Sulfate, bulk c-1 100 lb.	1.20	1.30	1.05	1.30	1.10	1.80	2.10	1.75
Southern points 100 lb.	1.20	1.25	.....	1.25	1.25	1.75	2.10	1.82½
Nitrate, 26% nitrogen 31.6% ammonia imported bags c.i.f. ton	34.60	35.00	34.60	35.00	34.60	35.00	57.60	45.00
Sulfocyanide, kegs lb.	.36	.48	.36	.48	.36	.48	.48	.36
Amyl Acetate, (from pentane) Tanks lb.	.....	.157	.157	.17½	.16	.222	.236	.222
Tech., drs lb.	.17½	.18	.17½	.18	.16½	.236	.24	.225
Alcohol, see Fusel Oil								
Furoate, 1 lb tins lb.	.....	5.00	.....	5.00	.....	5.00	5.00	5.00
Aniline Oil, 960 lb drs lb.	.14½	.16	.14½	.16	.14½	.16	.16	.15
Annatto, fine lb.	.34	.37	.34	.37	.34	.37	.37	.34
Anthraquinone, sublimed, 125 lb. bbls lb.	.50	.55	.50	.55	.50	.55	.90	.50
Antimony, metal slabs, ton lots lb.	.05	.05½	.05	.06½	.06½	.07½	.09½	.06½
Needle, powd, 100 lb cs lb.	.08½	.09	.08½	.09	.08½	.09	.09½	.08
Chloride, soln (butter of) cbys lb.	.13	.17	.13	.17	.13	.17	.17	.13
Oxide, 500 lb bbls lb.	.08½	.08¾	.08½	.08¾	.08½	.08¾	.08¾	.07½
Salt, 66%, tins lb.	.22	.24	.22	.24	.22	.24	.24	.22
Sulfuret, golden, bbls lb.	.16	.20	.16	.20	.16	.20	.20	.16
Vermillion, bbls lb.	.38	.42	.38	.42	.38	.42	.42	.38
Archil, conc, 600 lb bbls lb.	.17	.19	.17	.19	.17	.19	.19	.17
Double, 600 lb bbls lb.	.12	.14	.12	.14	.12	.14	.14	.12
Triple, 600 lb bbls lb.	.12	.14	.12	.14	.12	.14	.14	.12
Argols, 80%, casks lb.	.12½	.13	.12½	.13	.....	.18½	.18½	.18½
Crude, 30%, casks lb.	.07	.07½	.07	.07½	.07	.08	.08	.07½

*New formula, prices delivered N. Y., base price tanks .27½ producing points
*F. O. B. Producing Points

Prices Current and Comment

Purchasing Power of the Dollar: 1926 Average—$1.00 - 1931 Average $1.404 - Jan. 1931 $1.283 - May 1932 $1.63

about three-fourths of total production is used by producers. Between 1923 and 1929 total nitric acid output calculated to 100 per cent basis nearly doubled, acid of 100 per cent strength produced was almost 6 times more than in 1923 while 40° Baume acid was about one-half the amount produced in 1923. Data covering these phases for the Census years 1923 and 1929 are as follows:

	Nitric Acid	
	1923	*1929*
Production:	*Short Tons*	*Short Tons*
Total 100% basis (calculated)	77,633	143,454
36 degree Be	4,928	3,390
38 " "	10,758	733
40 " "	74,682	38,874
100 per cent. grade	21,948	114,951
C. P. "	800	2,305
In "explosives" industry	65,595	105,781
In "Chemicals not elsewhere classified" industry	47,521	54,472
In Illinois	4,709	7,904
" New Jersey	44,804	65,800
" Pennsylvania	15,606	12,584
" Other States	47,997	73,965

A comparison of consumption of nitric acid in major branches in 1919 and 1929 shows for chemicals 21.8 per cent and 34 per cent respectively; explosives 55.8 per cent and 66 per cent respectively and in 1919 for sulfuric, nitric and mixed acids and other industries 22.4 per cent with no respective data for 1929.

Acid Tartaric — There appears to be no let-up in the keen competitive position between domestic and imported material and further concessions were made during the month.

Ammonia Anhydrous — Seasonal demand appeared in the last half of the month. Prices are firm and unchanged.

Calcium Acetate — Sharp downward revisions in acetic acid scheules have held lime sales down but since the first of the year producers have held production very close to actual consumption as the following figures indicate.

Methanol

	Gallons	
	1932	
	Feb.	*†March*
Refined—		
Wood distillation—		
Production	119,620	103,279
Shipments	125,361	76,458
Stocks, end of month	266,244	293,065
Synthetic—		
Production	546,086	514,119
Shipments	473,993	425,596
Stocks, end of month	2,149,697	2,238,220
Crude—		
Production	230,324	295,359
Stocks, end of month—		
Total	429,718	473,466
At crude plants	313,985	329,384
At refineries and in transit	*115,733	144,082
	January-March	
	1931	*1932*
Refined—		
Wood distillation—		
Production	783,011	371,630
Shipments	588,088	304,271
Stocks, end of month	.....	.....
Synthetic—		
Production	2,164,521	1,646,085
Shipments	1,404,148	1,286,472
Stocks, end of month	.....	.....
Crude—		
Production	1,471,606	732,422
Stocks, end of month—		
Total	.....	.....
At crude plants	.....	.....
At refineries and in transit	.....	.....

	Current Market	1932 Low	1932 High	1931 High	1931 Low	1930 High	1930 Low
Aroclors, wks. lb.	.20	.20	.40	.20	.40	.40	.20
Arsenic, Red. 224 lb kegs, cs. lb.	.09½	.09½	.10	.09½	.10	.11	.08½
White, 112 lb kegs lb.	.04	.04	.05	.03¾	.05	.04½	.03¾
Asbestine, c-1 wks ton	.....	15.00	.....	15.00	.....	15.00	15.00
Barium							
Barium Carbonate, 200 lb bags wks ton	56.50	56.50	57.00	56.50	60.00	60.00	58.00
Chlorate, 112 lb kegs NY lb.	.14	.14	.15	.14	.15	.15	.14
Chloride, 600 lb bbl wks. ton	63.00	63.00	69.00	63.00	69.00	69.00	63.00
Dioxide, 88%, 690 lb drs lb.	.12	.12	.13	.12	.13	.13	.12
Hydrate, 500 lb bbls lb.	.04½	.04½	.05½	.04¾	.05½	.05½	.04¾
Nitrate, 700 lb casks lb.	.07¼	.07¼	.08	.07¼	.08¼	.08¼	.07¼
Barytes, Floated, 350 lb bbls wks ton	23.00	23.00	24.00	23.00	24.00	24.00	23.00
Bauxite, bulk, mines ton	5.00	5.00	6.00	5.00	8.00	8.00	5.00
Beeswax, Yellow, crude bags lb.	.21	.21	.22	.24	.22	.31	.34	.24
Refined, cases lb.	.24	.24	.25	.28	.25	.37	.38	.37
White, cases lb.	.33	.33	.34	.36	.34	.36	.53	.34
Benzaldehyde, technical, 945 lb. drums wks lb.	.60	.60	.65	.60	.65	.65	.60
Benzene							
Benzene, 90%, Industrial, 8000 gal tanks wks gal.	.....	.20	.....	.20	.18	.21	.22	.21
Ind. Pure, tanks works gal.	.....	.20	.....	.20	.18	.21	.22	.21
Benzidine Base, dry, 250 lb. bbls lb.	.65	.67	.65	.67	.65	.67	.74	.65
Benzoyl, Chloride, 500 lb drs. lb.	.45	.47	.45	.47	.45	.47	1.00	.45
Benzyl Chloride, tech drs lb.	.....	.30	.....	.30	.....	.30	.25	.25
Beta-Naphthol, 250 lb bbl wk lb.	.....	.22	.....	.22	.22	.24	.24	.22
Naphthylamine, sublimed, 200 lb bbls lb.	1.25	1.35	1.25	1.35	1.25	1.35	1.35	1.25
Tech, 200 lb bbls lb.	.53	.58	.53	.58	.53	.65	.65	.53
Blanc Fixe, 400 lb bbls wks. ton	60.00	75.00	60.00	80.00	75.00	90.00	90.00	75.00
Bleaching Powder							
Bleaching Powder, 800 lb drs c-1 wks contract 100 lb.	1.75	2.00	1.75	2.00	1.75	2.35	2.35	2.00
Blood, Dried, fob, NY Unit	1.40	1.50	1.40	1.90	1.65	3.00	3.90	3.00
Chicago Unit	1.50	1.60	1.50	1.60	1.50	2.35	4.50	2.75
S. American shipt Unit	.....	Nom	.....	Nom.	2.00	3.20	4.10	3.15
Blues, Bronze Chinese Milori Prussian Soluble lb.	.....	.35	.....	.35	.....	.35	.35	.35
Bone, raw, Chicago ton	21.00	21.50	21.00	21.50	21.00	32.00	39.00	31.00
Bone Ash, 100 lb kegs lb.	.06	.07	.06	.07	.06	.07	.07	.06
Black, 200 lb bbls lb.	.05½	.08½	.05½	.08½	.05½	.08½	.08½	.05½
Meal, 3% & 50%, Imp. ton	21.75	22.00	21.00	22.00	21.00	31.00	31.00	31.00
Borax, bags lb.	.018	.02	.018	.03¼	.02½	.03¼	.03¼	.02½
Bordeaux, Mixture, 16% pwd. lb.	.11½	.13	.11½	.13	.11½	.13	.14	.12
Paste, bbls lb.	.11½	.13	.11½	.13	.11½	.13	.14	.12
Brazilwood, sticks, shpmt lb.	26.00	28.00	26.00	28.00	26.00	28.00	28.00	26.00
Bromine, cases lb.	.36	.43	.36	.43	.36	.43	.47	.38
Bronze, Aluminum, powd blk. lb.	.60	1.20	.60	1.20	.60	1.20	1.20	.60
Gold bulk lb.	.55	1.25	.55	1.25	.55	1.25	1.25	.55
Butyl, Acetate, normal drs lb.	.134	.139	.134	.166	.161	.175	.20	.17
Tank, wks lb.	.....	.124	.124	.143	.143	.175	.186	.16
Aldehyde, 50 gal drs wks. lb.	.34	.36	.34	.36	.34	.44	.44	.34
Carbitol see Diethylene Glycol Mono (Butyl Ether)	.....	.....	.....	.....	.....	.....	.....	.....
Cellosolve (see Ethylene glycol mono butyl ether)								
Furoate, tech., 50 gal. dr. lb.	.....	.50	.....	.50	.....	.50	.50	.50
Propionate, drs lb.	.22	.25	.22	.25	.22	.25	.27	.22
Stearate, 50 gal drs lb.	.25	.25½	.25	.25½	.25	.30	.30	.25
Tartrate, drs lb.	.55	.60	.55	.60	.55	.60	.60	.55
Cadmium, Sulfide, boxes lb.	.65	.90	.65	.90	.65	.90	1.75	.90
Calcium								
Calcium, Acetate, 150 lb bags c-1 100 lb.	.....	2.50	2.00	2.50	.....	2.00	4.50	2.00
Arsenate, 100 lb bbls c-1 wks lb.	.05½	.06	.05½	.06	.06	.09	.09	.07
Carbide, drs lb.	.05	.06	.05	.06	.05	.06	.06	.05
Carbonate, tech, 100 lb bags c-1 lb.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Chloride, Flake, 375 lb drs c-1 wks ton	.....	21.00	.....	21.00	21.00	22.75	22.75	22.75
Solid, 650 lb drs c-1 fob wks ton	.....	18.00	.....	18.00	18.00	20.00	20.00	20.00
Nitrate, 100 lb bags ton	34.00	35.00	34.00	35.00	34.00	43.00	43.00	40.00
Peroxide, 100 lb drs lb.	.....	1.25	.....	1.25	.....	1.25	1.25	1.25
Phosphate, tech, 450 lb bbls. lb.	.08	.08¼	.08	.08¾	.08	.08¾	.08¾	.08
Stearate, 100 lb. bbls lb.	.17	.18	.17	.18	.17	.22	.26	.19
Calurea, bags S. points c.i.f. ton	.....	88.65	.....	88.65	.....	88.65	88.65	88.65
Camwood, Bark, ground bbls. lb.	.....	.18	.....	.18	.....	.18	.18	.18
Candelilla Wax, bags lb.	.....	.14	.....	.14	.13	.15	.20	.15
Carbitol, (See Diethylene Glycol Mono Ethyl Ether)	.....	.....	.....	.....	.....	.....	.....	.....
Carbon, Decolorizing, 40 lb bags c-1 lb.	.08	.15	.08	.15	.08	.15	.15	.08
Black, 100-300 lb cases 1c-1 NY lb.	.06	.12	.06	.12	.06	.12	.12	.06
Bisulfide, 500 lb drs 1c-1 NY lb.	.05½	.06	.05½	.06	.05½	.06	.06	.05½
Dioxide, Liq. 20-25 lb cyl. lb.	.....	.06	.....	.06	.....	.06	.18	.06
Tetrachloride, 1400 lb drs delivered lb.	.06½	.07	.06½	.07	.06½	.07	.07	.06½
Carnauba Wax, Flor, bags lb.	.26	.28	.26	.28	.26	.28	.37	.28
No. 1 Yellow, bags lb.	.22	.22½	.21½	.24	.23	.40	.33	.25
No. 2 N Country, bags lb.	.15	.16	.14	.16	.15	.23	.27	.20
No. 2 Regular, bags lb.	.21	.22	.21	.22	.21	.23	.30	.23
No. 3 N. C. lb.	.11½	.12	.11	.12	.11	.11	.23	.16
No. 3 Chalky lb.	.11½	.12	.11	.12	.11	.13½	.23	.16
Casein, Standard, Domestic ground lb.	.05¾	.06	.05¼	.07½	.06	.10	.15½	09½

Prices Current and Comment

Purchasing Power of the Dollar: 1926 Average—$1.00 - 1931 Average $1.404 - Jan. 1931 $1.283 - May 1932 $1.63

Acetate of Lime

	Pounds	
Production	3,182,287	4,603,781
Shipments	3,457,068	4,527,027
Stocks	8,835,918	8,912,672
	Pounds	
Production	22,548,289	10,980,657
Shipments	13,127,588	10,840,162
Stocks	.....	.....

Calcium Chloride — Producers report a greater interest from consumers for dust laying purposes and the outlook for the next few months is promising although little expectation exists of reaching last years' total. Prices are firm. Of the March exports of 696,164 pounds, Canada purchased 559,635 pounds; Panama, 97,350 pounds; Cuba, 30,000 pounds; Chile, 1,200 pounds; Columbia, 2,000 pounds; Venezuela, 3,000 pounds and Hong Kong, 1,200 pounds.

Camphor — Camphor prices turned firmer as the month opened, slabs being quoted 1c higher, tablets, 1c, and powdered 1c. This advance was lost later in the month, slabs being reduced ½c, tablets, 2c, powdered 2c. Imports of natural crude camphor into the U. S. increased from 220,900 pounds valued at $84,300 during the first quarter of 1931 to 609,800 pounds valued at $186,200 in the corresponding period this year. Imports of natural refined camphor gained from 263,700 pounds worth $127,300 to 531,300 pounds valued at $201,000 in the aforementioned periods respectively. Synthetic camphor suffered a drop from 616,500 pounds worth $205,500 to 500,200 pounds valued at $135,500.

Carbon Black — The movement into the tire and ink industries was described by leading producers as fair. No change in the price schedule has been made and shipments from Texas are being made on the basis of 2¾c, f. o. b. works. The downward tendency in German carbon black imports, evidenced in 1931, was carried into 1932, imports in the first two months falling to 1,084 tons, from 1,251 tons in the same period of 1931. The following table in metric tons indicates the outstanding importance which the U. S. has continued to hold in the German carbon black trade:

	Year	
Country of Origin	*1930* *Tons*	*1931* *Tons*
United States	5,718	5,661
All Others	95	97
Total Imports	5,813	5,758
Value in Marks	4,499,000	3,284,000
	First Two Months	
Country of Origin	*1931* *Tons*	*1932* *Tons*
United States	1,244	1,060
All Others	7	24
Total Imports	1,251	1,084
Value in Marks	743,000	664,000

Coal-Tar Chemicals — The continued shortage in stocks of toluene showed little change in May from the previous month. Monthly consumption of coal was

	Current Market	1932 Low	1932 High	1931 High	1931 Low	1930 High	1930 Low
Cellosolve (see Ethylene glycol mono ethyl ether)							
Acetate (see Ethylene glycol mono ethyl ether acetate)							
Celluloid, Scraps, Ivory cs. lb.	.13	.15	.13	.15	.13	.15	.20	.20
Shell, cases lb.	.18	.20	.18	.20	.18	.20	.20	.18
Transparent, cases lb.	.....	.15	.....	.15	.....	.15	.15	.15
Cellulose, Acetate, 50 lb kegs lb.	.80	.90	.80	.90	.80	1.25	1.25	.80
Chalk, dropped, 175 lb bbls. lb.	.03	.03½	.03	.03½	.03	.03½	.03½	.03
Precip, heavy, 560 lb cks. lb.	.02	.03½	.02	.03½	.02	.03½	.03½	.02
Light, 250 lb casks lb.	.02½	.03½	.02½	.03½	.02½	.03½	.03½	.02½
Charcoal, Hardwood, lump, bulk wks bu.	.18	.19	.18	.19	.18	.19	.19	.18
Willow, powd, 100 lb bbl. wks lb.	.06	.06½	.06	.06½	.06	.06½	.06½	.06
Wood, powd, 100 lb bbls. lb.	.04	.05	.04	.05	.04	.05	.05	.04
Chestnut, clarified bbls wks. lb.	.01⅞	.02	.01⅞	.02	.01⅞	.03	.03	.02½
25% tks wks lb.	.01⅞	.02½	.01⅞	.02½	.01⅞	.02½	.02½	.01⅞
Powd, 60%, 100 lb bgs wks. lb.	.....	.04½	.....	.04½	.....	.04½	.04½	.04½
Powd, decolorized bgs wks. lb.	.05½	.06	.05½	.06	.05½	.06	.06	.05½
China Clay, lump, blk mines. ton	8.00	9.00	8.00	9.00	8.00	9.00	9.00	8.00
Powdered, bbls lb.	.01½	.02	.01½	.02	.01½	.02	.02	.01½
Pulverized, bbls wks ton	10.00	12.00	10.00	12.00	10.00	12.00	12.00	10.00
Imported, lump, bulk ton	15.00	25.00	15.00	25.00	15.00	25.00	25.00	15.00
Powdered, bbls lb.	.01½	.03	.01½	.03	.01½	.03	.03	.01½
Chlorine								
Chlorine, cyls 1c-1 wks contract lb.	.07	.08½	.07	.08½	.07	.08½	.08½	.07
cyls, cl wks., contract lb.	.04	.04½	.04	.04½	.04	.04½	.04½	.04
Liq tank or multi-car lot cyls wks contract lb.	.01¾	.02½	.01½	.02½	.01½	.02½	.025	.01½
Chlorobenzene, Mono, 100 lb. drs 1c-1 wks lb.	.10	.10½	.10	.10½	.10	.10½	.10½	.10
Chloroform, tech, 1000 lb drs. lb.	.15	.16	.15	.16	.15	.16	.16	.15
Chloropicrin, comml cyls lb.	1.00	1.35	1.00	1.35	1.00	1.35	1.35	1.00
Chrome, Green, CP lb.	.26	.29	.26	.29	.26	.29	.29	.26
Commercial lb.	.06½	.10	.06½	.11	.06½	.11	.11	.06½
Yellow lb.	.16	.18	.16	.18	.16	.18	.18	.16
Chromium, Acetate, 8% Chrome bbls lb.	.04½	.05½	.04½	.05½	.04½	.05½	.05½	.04½
20° soln, 400 lb bbls lb.	.....	.05½	.....	.05½	.....	.05½	.05½	.05½
Fluoride, powd, 400 lb bbl. lb.	.27	.28	.27	.28	.27	.28	.28	.27
Oxide, green, bbls lb.	.34½	.35½	.34½	.35½	.34½	.35½	.35½	.34½
Coal tar, bbls bbl.	10.00	10.50	10.00	10.50	10.00	10.50	10.50	10.00
Cobalt Oxide, black, bags lb.	1.35	1.45	1.35	1.45	1.35	2.22	2.22	2.10
Cochineal, gray or black bag. lb.	.52	.57	.52	.57	.52	.57	1.01	.52
Teneriffe silver, bags lb.	.....	.57	.....	.57	.55	.57	.95	.54
Copper								
Copper, metal, electrol. 100 lb.	5.32	5.20	5.32	7.25	6.25	10.36	17.78	9.50
Carbonate, 400 lb bbls lb.	.08½	.16½	.08½	.16½	.08½	.16½	.21½	.08½
Chloride, 250 lb bbls lb.	.22	.25	.22	.25	.22	.25	.28	.22
Cyanide, 100 lb drs lb.	.39	.40	.39	.40	.39	.42	.45	.41
Oxide, red, 100 lb bbls lb.	.15	.16	.15	.16	.15	.18	.32	.15½
Sub-acetate verdigris, 400 lb bbls lb.	.18	.19	.18	.19	.18	.19	.19	.18
Sulfate, bbls c-1 wks 100 lb.	.....	2.75	2.75	3.10	3.10	4.95	5.50	3.95
Copperas, crys and sugar bulk c-1 wks ton	.....	14.50	.....	14.50	13.00	14.00	14.00	13.00
Cotton, Soluble, wet, 100 lb bbls lb.	.40	.42	.40	.42	.40	.42	.42	.40
Cottonseed, S. E. bulk c-1 ton	.....	26.50	.....	26.50	.....	26.50	.....	.....
Meal S. E. bulk ton	.....	.....	.....	.....	.....	.....	.....	.....
7% Amm., bags mills ton	13.25	38.00	13.25	38.00	13.25	38.00	38.00	37.50
Cream Tartar, USP, 300 lb. bbls lb.	.15¾	.19	.18¾	.20½	.20½	.24½	.27	.24½
Creosote, USP, 42 lb cbys lb.	.40	.42	.40	.42	.40	.42	.42	.40
Oil, Grade 1 tanks gal.	.11½	.12½	.11½	12½	.11½	.14	.16	.15
Grade 2 gal.	.10½	.11½	.10½	.11½	.10½	.12	.14	.13
Grade 3 gal.	.10½	.11½	.10½	.11½	.10½	.12	.14	.13
Cresol, USP, drums lb.	.10½	.11	.10½	.11	.10½	.17	.17	.14
Crotonaldehyde, 50 gal dr. lb.	.32	.36	.32	.36	.32	.36	.36	.32
Cudbear, English lb.	.16	.17	.16	.17	.16	.17	.17	.16
Cutch, Rangoon, 100 lb bales lb.	.10	.12	.10	.12	.10	.13	.13	.11
Borneo, Solid, 100 lb bale lb.	.05½	.07	.05½	.07	.05½	.08½	.08½	.06½
Cyanamide, bags c-1 frt allowed Ammonia unit	.....	.97½	.....	.97½	.97½	.....	.....	.....
Dextrin, corn, 140 lb bags. 100 lb.	3.24	3.45	3.24	3.67	3.47	4.02	4.82	4.42
White, 140 lb bags 100 lb.	3.19	3.37	3.19	3.37	3.37	4.02	4.77	4.17
Potato Yellow, 220 lb bgs. lb.	.08	.09	.08	.09	.08	.09	.09	.08
White, 220 lb bags 1c-1 lb.	.08	.09	.08	.09	.08	.09	.09	.08
Tapioca, 200 lb bags 1c-1. lb.	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08
Diamylphthalate, drs wks. gal.	.....	3.80	.....	3.80	.....	3.80	3.80	3.80
Dianisidine, barrels lb.	2.35	2.70	2.35	2.70	2.35	2.70	2.70	2.35
Dibutylphthalate, wks lb.	.218	.22	.218	.23½	.228	.28	.28	.24½
Dibutyltartrate, 50 gal drs. lb.	.29½	.31½	.29½	.31½	.29½	.31½	.31½	.29½
Dichloroethylether, 50 gal drs lb.	.....	.06	.....	.06	.....	.06	.07	.05
Dichloromethane, drs wks lb.	.55	.65	.55	.65	.55	.65	.65	.55
Diethylamine, 400 lb drs lb.	2.75	3.00	2.75	3.00	2.75	3.00	3.00	2.75
Diethylcarbonate, drs gal.	1.85	1.90	1.85	1.90	1.85	1.90	1.90	1.85
Diethylaniline, 850 lb drs lb.	.55	.60	.55	.60	.55	.60	.60	.55
Diethyleneglycol, drs lb.	.14	.16	.14	.16	.14	.16	.13	.10
Mono ethyl ether, drs. lb.	.15	.16	.15	.16	.15	.16	.16	.13
Mono butyl ether, drs. lb.	.24	.30	.24	.30	.24	.30	.30	.24
Diethylene oxide, 50 gal drs. lb.	.....	.50	.....	.50	.....	.50	.50	.50
Diethylorthotoluidin, drs lb.	.64	.67	.64	.67	.64	.67	.67	.64
Diethyl phthalate, 1000 lb. drums lb.	.23	.26	.23	.26	.23	.26	.26	.24
Diethylsulfate, technical, 50 gal drums lb.	.30	.35	.30	.35	.30	.35	.35	.30
Dimethylamine, 400 lb drs lb.	.....	2.62	.....	2.62	.....	2.62	2.62	2.62
Dimethylaniline, 340 lb drs. lb.	.25	.27	.25	.27	.25	.28	.28	.26

Prices Current and Comment

Purchasing Power of the Dollar: 1926 Average—$1.00 - 1931 Average $1.404 - Jan. 1931 $1.283 - May 1932 $1.63

estimated in the manufacture of coke at 2,723,500 tons in April as compared with 3,023,400 tons in March and 4,513,500 tons in April, 1931. Production of tar amounted to 25,066,200 gallons in April as compared with 27,815,280 gallons in March and 41,514,200 gallons in April, 1931. Amount of light oils recovered in April totaled 8,333,910 gallons as compared with 9,251,604 gallons in March and 13,811,310 gallons in April last year. Output of ammonium sulfate or its equivalent aggregated 32,005 tons in April contrasted with 35,479 tons in March and 52,965 tons in April, 1931. Stocks of coke are still heavy, 3,556,000 tons at the end of April, and producers are expected to curtail production still further in an effort to move this supply. An improved demand was in evidence for naphthalene and solvent naphtha. In the intermediate group quiet conditions prevailed, but with prices generally firm.

Copperas — Some extra seasonal demand for water purification purposes resulted in a scarcity of material in barrels. Small steel production has acted to prevent any accumulation of stocks.

Copper — The metal sank lower during the past month with the domestic quotation being announced as 5¼c and export 5½c. The first official statement of the size of surplus stocks of copper in North and South America since the publication of monthly figures was discontinued last fall was made in a report of the American Bureau of Metal Statistics, January 1 total stocks of refined and blister copper, including that in process, were 722,014 tons. Stocks of refined copper at that time were 544,278 tons, a new high record. Stocks of refined copper gained 46,283 tons from October 1, when the figures were discontinued, to January 1. Production was reduced to 26 per cent of capacity immediately after January 1, and has since been cut to 20 per cent, indicating that a smaller rate of increase may have occurred since then. Production of refined copper in North and South America in 1931 totaled 1,136,599 tons against 1,459,370 tons in 1930. Total deliveries of copper for domestic and foreign account were 959,496 tons for the year, against 1,263,515 tons for 1930. Shipments were the lowest since 1922 when deliveries were 907,405 tons. Domestic shipments for the year were 600,754 tons, the smallest since 1922. World stocks of copper at the close of 1931 were 763,588 tons, bearing out the recent statements of copper men that the bulk of the supplies are concentrated in the hands of American-controlled companies. Stocks at the end of 1930 were 603,047 tons.

	Current Market		1932 Low	1932 High	1931 High	1931 Low	1930 High	1930 Low
Dimethylsulfate, 100 lb drs...lb.	.45	.50	.45	.50	.45	.50	.50	.45
Dinitrobenzene, 400 lb bbls...lb.	.15	.16	.15	.16	.15	.16½	.16½	.15½
Dintrochlorobenzene, 400 lb bbls.....lb.	.13	.15	.13	.15	.13	.15	.15	.13
Dinitronaphthalene, 350 lb bbls .....lb.	.34	.37	.34	.37	.34	.37	.37	.34
Dinitrophenol, 350 lb bbls....lb.	.23	.24	.23	.24	.29	.30	.32	.31
Dinitrotoluene, 300 lb bbls...lb.	.16	.17	.16	.17	.16	.17	.18	.16
Diorthotolyguanidine, 275 lb bbls wks.....lb.	.42	.46	.42	.46	.42	.46	.46	.42
Dioxan (See Diethylene Oxide)	.....	.....	.....	.....	.....	.....	.....	.....
Diphenyl.....lb.	.20	.40	.20	.40	.20	.40	.50	.20
Diphenylamine.....lb.	.34	.37	.34	.37	.37	.38	.40	.38
Diphenylguanidine, 100 lb bbl lb.	.30	.35	.30	.35	.30	.35	.35	.30
Dip Oil, 25%, drums.....lb.	.26	.30	.26	.30	.26	.30	.30	.26
Divi Divi pods, bgs shipmt..ton	28.00	29.00	28.00	30.00	28.00	35.00	46.50	35.00
Extract.....lb.	.05	.05½	.05	.05½	.05	.05½	.05½	.05
Egg Yolk, 200 lb cases.....lb.	.45	.46	.45	.52	.45	.58	.80	.72
Epsom Salt, tech, 300 lb bbls c-1 NY..... ....100 lb.	1.70	1.90	1.70	1.90	1.70	1.90	1.90	1.70
Ether, USP anaesthesia 55 lb. drs. .....lb.	.22	.23	.22	.23	.23	.28	.28	.21
USP (Conc.).....lb.	.09	.10	.09	.10	.09	.10	.....	.....
Ethyl Acetate, 85% Ester, ... tanks.....lb.	.....	.09	.....	.09	.06½	.09	.115	.085
drums.....lb.	.....	.10	.....	.10	.08	.10	.158	.094
Anhydrous, tanks.....lb.	.....	.10	.....	.10	.075	.119	.142	.119
drums.....lb.	.....	.10½	.....	.10½	.085	.121	.156	.115
Acetoacetate, 50 gal drs....lb.	.65	.68	.65	.68	.65	.68	.68	.65
Benzylaniline, 300 lb drs...lb.	.88	.90	.88	.90	.88	.90	1.11	.88
Bromide, tech, drums .....lb.	.50	.55	.50	.55	.50	.55	.55	.50
Carbonate, 90%, 50 gal drs gal.	1.85	1.90	1.85	1.90	1.85	1.90	1.90	1.85
Chloride, 200 lb. drums....lb.	.....	.22	.....	.22	.....	.22	.22	.22
Chlorocarbonate, cbys.....lb.	.....	.30	.....	.30	.....	.30	.40	.30
Ether, Absolute, 50 gal drs..lb.	.50	.52	.50	.52	.50	.52	.52	.50
Furoate, 1 lb tins .....lb.	.....	5.00	.....	5.00	.....	5.00	5.00	5.00
Lactate, drums works.....lb.	.25	.29	.25	.29	.25	.29	.29	.25
Methyl Ketone, 50 gal drs..lb.	.....	.30	.....	.30	.....	.30	.30	.30
Oxalate, drums works.....lb.	.45	.55	.45	.55	.45	.55	.55	.45
Oxybutyrate, 50 gal drs wks.lb.	.....	.30½	.....	.30½	.....	.30½	.30½	.30½
Ethylene Dibromide, 60 lb dr .lb.	.....	.70	.....	.70	.....	.70	.70	.70
Chlorhydrin, 40%, 10 gal cbys. chloro. cont.....lb.	.75	.85	.75	.85	.75	.85	.85	.75
Dichloride, 50 gal drums...lb.	.05	.07	.05	.07	.05	.07	.07	.05
Glycol, 50 gal drs wks.....lb.	.25	.28	.25	.28	.25	.28	.28	.25
Mono Butyl Ether drs wks.	.....	.24	.....	.24	.24	.27	.27	.23
Mono Ethyl Ether drs wks	.17	.20	.17	.20	.17	.20	.20	.16
Mono Ethyl Ether Acetate dr. wks.....	.19½	.23	.19½	.23	.19½	.23	.23	.19
Mono Methyl Ether, drs.lb.	.21	.23	.21	.23	.21	.23	.23	.19
Stearate.....	.18	.18	.18	.18	.18	.18	.....	.....
Oxide, cyl.....lb.	.....	2.00	.....	2.00	.....	2.00	2.00	2.00
Ethylidenaniline.....lb.	.45	.47½	.45	.47½	.45	.47½	.47½	.45
Feldspar, bulk.....ton	15.00	20.00	15.00	20.00	15.00	20.00	25.00	15.00
Powdered, bulk works.....ton	15.00	21.00	15.00	21.00	15.00	21.00	21.00	15.00
Ferric Chloride, tech, crystal 475 lb bbls.....lb.	.05	.07½	.05	.07½	.05	.07½	.07½	.05
Fish Scrap, dried, wks.....unit	.....	2.60&10	2.60&10	3.00&10	3.00&10	4.25&10	4.35&10	3.90&10
Acid, Bulk 7 & 3½% delivered Norfolk & Balt. basis...unit	.....	2.00&50	2.00&50	2.40&50	.....	2.40&50	3.50&50	3.20&50
Fluorspar, 98%, bags.....	41.00	46.00	41.00	46.00	41.00	46.00	46.00	41.00
Formaldehyde								
Formaldehyde, aniline, 100 lb. drums.....lb.	.37½	.42	.37½	.42	.37½	.42	.42	.37½
USP, 400 lb bbls wks.....lb.	.06	.07½	.06	.07½	.06	.07½	.08	.06
Fossil Flour.....lb.	.02½	.04	.02½	.04	.02½	.04	.04	.02½
Fullers Earth, bulk, mines ..ton	15.00	20.00	15.00	20.00	15.00	20.00	20.00	15.00
Imp. powd 100 bags.....ton	24.00	30.00	24.00	30.00	24.00	30.00	30.00	24.00
Furfural (tech.) drums, wks..lb.	.....	.10	.....	.10	.....	.10	.15	.10
Furfuramide (tech) 100 lb dr..lb.	.....	.30	.....	.30	.....	.30	.30	.30
Furfuryl Acetate, 1 lb tins....lb.	.....	5.00	.....	5.00	.....	5.00	5.00	5.00
Alcohol, (tech) 100 lb dr....lb.	.....	.50	.....	.50	.....	.50	.50	.50
Furoic Acid (tech) 100 lb dr...lb.	.....	.50	.....	.50	.....	.50	.50	.50
Fusel Oil, 10% impurities ...gal.	.....	1.35	.....	1.35	.....	1.35	1.35	1.35
Fustic, chips.....lb.	.04	.05	.04	.05	.04	.05	.05	.04
Crystals, 100 lb boxes.....lb.	.18	.20	.18	.20	.18	.22	.22	.20
Liquid, 60°, 600 lb bbls....lb.	.07	.08	.07	.08	.07	.10	.10	.09
Solid, 50 lb boxes. .....lb.	.14	.16	.14	.16	.14	.16	.16	.14
Sticks.....ton	25.00	26.00	25.00	26.00	25.00	26.00	26.00	25.00
G Salt paste, 360 lb bbls.....lb.	.45	.50	.45	.50	.45	.50	.50	.45
Gall Extract.....lb.	.18	.20	.18	.20	.18	.20	.20	.18
Gambier, common 200 lb cs. .lb.	.....	.07	.....	.07	.06½	.07	.07	.06
25% liquid, 450 lb bbls....lb.	.08	.10	.08	.10	.08	.10	.10	.08
Singapore cubes, 150 lb bg..lb.	.09½	.09	.09½	.09	.09½	.09	.09	.08½
Gelatin, tech, 100 lb cases....lb.	.45	.50	.45	.50	.45	.50	.50	.45
Glauber's Salt, tech, c-1 wks.....100 lb.	1.00	1.70	1.00	1.70	1.00	1.70	1.70	1.00
Glucose (grape sugar) dry 70-80° bags c-1 NY.....100 lb.	3.24	3.34	3.24	3.34	3.24	3.34	3.34	3.24
Tanner's Special, 100 lb bags .....100 lb.	.....	3.14	.....	3.14	.....	3.14	3.14	3.14
Glue, medium white, bbls ...lb.	.16	.20	.16	.20	.16	.24	.24	.20
Pure white, bbls.. .....lb.	.20	.25	.20	.27	.20	.26	.26	.22
Glycerin, CP, 550 lb drs.....lb.	.10½	.10½	.10½	.11½	.11½	.14½	.14½	.12½
Dynamite, 100 lb drs.... lb.	.07½	.08	.07½	.09½	.09	.12½	.12½	.11
Saponification, tanks.... lb.	.04½	.04¾	.04½	.06½	.06	.07½	.08	.07½
Soap Lye, tanks.....lb.	.03½	.04	.03¾	.05	.04¼	.07	.07½	.06¾
Graphite, crude, 220 lb bgs...ton	12.00	23.00	12.00	35.00	15.00	35.00	35.00	15.00
Flake, 500 lb bbls.....lb.	.05	.06	.05	.09	.06	.09	.09	.06
Gums								
Gum Accroides, Red, coarse and fine 140-150 lb bags.....lb.	.03¾	.04½	.03¾	.04½	.03¾	.04½	.04½	.03¾
Powd, 150 lb bags .....lb.	.06	.06½	.06	.06½	.06	.06½	.06½	.06

Prices Current and Comment

Purchasing Power of the Dollar: 1926 Average—$1.00 - 1931 Average $1.404 - Jan. 1931 $1.283 - May 1932 $1.63

Copper Sulfate — In the last week of the month there was considerable pick-up in demand. Producers expect a very heavy rush for the next month or six weeks as consumers have withheld purchasing until the last minute. With the copper market in the doldrums little if any change in the sulfate price is looked for.

Gums — Prices were fairly well held during the past month in the face of extremely light trading both in spot stocks and for future shipment. General declines prevailed in U. S. importations of the following gums and waxes during the first quarter of 1932, as compared with the January-March period of 1931:

	1st Quarter 1931 Quantity Pounds	*1931 Value*	*1st Quarter 1932 Quantity Pounds*	*1932 Value*
Gum arabic	2,728	$214	1,454	$64
Tragacanth	443	187	365	125
Kadaya & Talka	1,191	92	955	56
Other gums and resins	2,358	219	1,326	116
Crude balsams	106	50	77	22
Beeswax, crude	1,000	246	967	142
Carnauba wax	2,670	370	1,900	239
Vegetable wax	511	51	626	46

Lead — In common with most of the commodity markets the lead market has not been strengthened by the general business and politico-financial condition of affairs but prices, at least openly quoted differed very little from April. Stocks of lead at smelters and refiners in the U. S. on May 1 totaled 238,224 short tons, against 238,743 tons on April 1 and 189,344 tons on May 1, 1931, according to American Bureau of Metal Statistics.

Mixed Fertilizers — According to figures compiled by The National Fertilizer Association from reports furnished by State officials, April tag sales in the 13 Southern States and three Mid-western States were 75 per cent of the sales for last April and 61 per cent of the sales for April, 1930. Ordinarily about 20 per cent of the year's tag sales are made in April in the Southern States. During 1931, however, about 28 per cent of the year's sales were made in April. The tag sales during April for Texas and Oklahoma were more than 100 per cent of last April. April sales in South Carolina were 97 per cent, Georgia 93 per cent, North Carolina 88 per cent and Missouri 84 per cent of the sales for April, 1931. The sales in Virginia, Alabama and Louisiana were between 60 and 70 per cent of the sales for last April. The sales in Florida were 54 per cent of April, 1931 and the Mississippi sales were 49 per cent of the sales for last April. In Arkansas and Tennessee the sales for April were less than 40 per cent of the sales for April, 1931. The tag sales in the three Mid-western States, Illinois, Indiana and Kansas combined were 28 per cent of

	Current Market	1932 Low	1932 High	1931 High	1931 Low	1930 High	1930 Low
Yellow, 150-200 lb bags....lb.	.18	.20	.18	.20	.18	.20	.20	.18
Animi (Zanzibar) bean & pea 250 lb cases....lb.	.35	.40	.35	.40	.35	.40	.40	.35
Glassy, 250 lb cases....lb.	.50	.55	.50	.55	.50	.55	.55	.50
Asphaltum, Barbadoes (Manjak) 200 lb bags....lb.	.04	.05	.04	.06	.04½	.12	.12	.09
Egyptian, 200 lb cases....lb.	.13	.15	.13	.15	.13	.17	.17	.15
Gilsonite Selects, 200 lb bags ....ton	30.50	32.90	30.50	32.90	30.50	32.90	32.90	30.50
Damar Batavia standard 136, lb cases....lb.	.08½	.09	.08½	.09	.08½	.13	.20	.14
Batavia Dust, 160 lb bags....lb.	.04	.05	.04	.05½	.05½	.06	.11	.06
E Seeds, 136 lb cases....lb.	.05½	.06	.05½	.06½	.07	.08	.13	.08
F Splinters, 136 lb cases and bags....lb.	.05½	.06	.05½	.06	.06½	.07½	.13½	.07
Singapore, No 1, 224 lb cases lb.	.10½	.11	.10½	.11	.10½	.15	.24	.18½
No. 2, 224 lb cases....lb.	.06	.07	.06	.07½	.07	.10	.20½	.13
No. 3, 180 lb bags....lb.	.04½	.05	.04½	.05	.05	.06	.11½	.07
Benzoin Sumatra, U. S. P. 120 lb cases....lb.	.21	.22	.21	.22	.23	.34	.40	.33
Copal Congo, 112 lb bags, clean opaque....lb.	.16½	.17	.16½	.17	.16	.17	.17	.16
Dark, amber....lb.	.06	.07	.06	.07	.06½	.07½	.08	.07½
Light, amber....lb.	.08	.08½	.08	.09	.08	.14	.14	.12½
Water white....lb.	.37	.45	.37	.45	.37	.45	.45	.37
Mastic....lb.	.....	.40	.35	.40	.42	.58	.65	.57
Manila, 180-190 lb baskets								
Loba A....lb.	.09	.10	.09	.11	.11	.13	.17½	.13
Loba B....lb.	.08	.08½	.08	.08½	.09	.10½	.16½	.13½
Loba C....lb.	.07	.08	.07	.08	.08½	.10	.14	.10
M A Sorts....lb.	.04½	.05	.04½	.05	.04½	.06½	.....	.....
D B B Chips....lb.	.05	.06	.05	.06½	.05½	.08	.....	.....
East Indies chips, 180 lb bags lb.	.04½	.05	.04½	.05½	.05	.05½	.11	.09
Pale bold, 224 lb cs....lb.	.15	.16	.15	.16	.15½	.16	.21	.17½
Pale nubs, 180 lb bags....lb.	.08	.08½	.08	.08½	.08	.09	.16	.12½
Pontianak, 224 lb cases....								
Bold gen No 1....lb.	.14	.15	.14	.16	.16	.17	.21	.19
Gen chips spot....lb.	.07	.08	.07	.08	.07	.08½	.15	.13½
Elemi, No. 1, 80-85 lb cs...lb.	.09	.09½	.09	.09½	.10	.12	.14	.12½
No. 2, 80-85 lb cases....lb.	.08½	.09	.08½	.09	.09½	.11½	.13½	.12
No. 3, 80-85 lb cases....lb.	.08	.08½	.08	.08½	.08½	.11	.13	.11
Kauri, 224-226 lb cases No. 1	.38	.42	.38	.42	.42	.50	.57	.48
No. 2 fair pale....lb.	.20	.25	.20	.30	.24	.29	.38	.32
Brown Chips, 224-226 lb cases....lb.	.10	.12	.10	.12	.10	.12	.12	.10
Bush Chips, 224-226 lb. cases....lb.	.22	.24	.22	.24	.28	.34	.40	.38
Pale Chips, 224-226 lb cases ....lb.	.11	.14	.11	.14	.19	.22	.26	.24½
Sandarac, prime quality, 200 lb bags & 300 lb casks...lb.	.23½	.24	.23	.24	.18	.22	.40	.27
Helium, 1 lit. bot....lit.	.....	25.00	.....	25.00	.....	25.00	25.00	25.00
Hematine crystals, 400 lb bbls lb.	.14	.18	.14	.18	.14	.18	.18	.14
Paste, 500 bbls....lb.	.....	.11	.....	.11	.....	.11	.11	.11
Hemlock 25%, 600 lb bbls wks lb.	.....	.04½	.03	.04½	.03	.03½	.03½	.03
Bark....ton	.....	16.00	.....	16.00	.....	16.00	16.00	16.00
Hexalene, 50 gal drs wks....lb.	.....	.30	.30	.40	.40	.60	.60	.60
Hexamethylenetetramine, drs .lb.	.46	.47	.46	.47	.46	.50	.50	.46
Hoof Meal, fob Chicago....unit	.....	1.00	1.00	1.35	1.35	2.50	3.75	2.50
South Amer. to arrive....unit	.....	1.45	1.45	1.65	1.80	2.70	3.75	2.70
Hydrogen Peroxide, 100 vol, 140 lb cbys....lb.	.20	.21	.20	.21	.21	.24	.26	.21
Hydroxyamine Hydrochloride lb.	.....	3.15	.....	3.15	.....	3.15	3.15	3.15
Hypernic, 51°, 600 lb bbls....lb.	.11	.12	.11	.12	.11	.15	.15	.12
Indigo Madras, bbls....lb.	1.25	1.30	1.25	1.30	1.25	1.30	1.30	1.28
20% paste, drums....lb.	.15	.18	.15	.18	.15	.18	.18	.15
Synthetic, liquid....lb.	.....	.12	.....	.12	.....	.12	.12	.12
Iron Chloride, see Ferric or Ferrous								
Iron Nitrate, kegs....lb.	.09	.10	.09	.10	.09	.10	.10	.09
Coml, bbls....100 lb.	2.50	3.25	2.50	3.25	2.50	3.25	3.25	2.50
Oxide, English....lb.	.04	.10	.04	.10	.10	.12	.12	.10
Red, Spanish....lb.	.02	.03½	.02	.03½	.02½	.03½	.03½	.02½
Isopropyl Acetate, 50 gal drs gal.	.85	.90	.85	.90	.85	.90	.90	.85
Japan Wax, 224 lb cases....lb.	.07½	.08	.07½	.09	.07½	.11	.15½	.11½
Kieselguhr, 95 lb bgs NY....								
Brown....ton	60.00	70.00	60.00	70.00	60.00	70.00	70.00	60.00
Lead Acetate, bbls wks...100 lb.	9.00	9.50	9.00	10.00	9.50	11.00	13.50	10.50
White crystals, 500 lb bbls wks....100 lb.	10.00	10.50	10.00	11.00	10.50	12.25	14.50	11.50
Arsenate, drs 1c-1 wks....lb.	.10	.13	.10	.13	.10	.14	.16	.13
Dithiofuroate, 100 lb dr....lb.	.....	1.00	.....	1.00	.....	1.00	1.00	1.00
Metal, c-1 NY....100 lb.	.....	3.00	3.00	3.75	3.75	4.60	7.75	5.10
Nitrate, 500 lb bbls wks....lb.	.12	.14	.12	.14	.12	.14	.14	.13
Oleate, bbls....lb.	.17½	.18	.17½	.18	.17½	.18	.18	.17½
Oxide Litharge, 500 lb bbls.lb.	.06½	.07	.06½	.07	.06½	.08	.08½	.08½
Red, 500 lb bbls wks....lb.	.06¾	.07	.06¾	.07	.06¾	.08¼	.09¼	.08¾
White, 500 lb bbls wks...lb.	.06¾	.07	.06¾	.07	.06¾	.08	.09¼	.07¾
Sulfate, 500 lb bbls wk...lb.	.05¾	.06	.05¾	.06	.05¾	.07	.08¼	.06¾
Leuna saltpetre, bags c.i.f...ton	.....	Nom.	.....	Nom.	.....	57.60	57.60	57.60
S. points c. i. f....ton	.....	Nom.	.....	Nom.	.....	57.90	57.90	57.90
Lime, ground stone bags....ton	.....	4.50	.....	4.50	.....	4.50	4.50	4.50
Live, 325 lb bbls wks...100 lb.	.....	1.05	.....	1.05	.....	1.05	1.05	1.05
Lime Salts, see Calcium Salts								
Lime-Sulfur soln bbls....gal.	.15	.17	.15	.17	.15	.17	.17	.15
Lithopone, 400 lb bbls 1c-1 wks ....lb.	.04¼	.05	.04¼	.05	.04¼	.05	.05¼	.04¼
Logwood, 51°, 600 lb bbls....lb.	.07	.08	.07	.08	.07	.08	.08½	.07
Chips, 150 lb bags....lb.	.03	.03½	.03	.03½	.03	.03½	.03½	.03
Solid, 50 lb boxes....lb.	.12	.12½	.12	.12½	.12	.12½	.12½	.12½
Sticks....ton	24.00	26.00	24.00	26.00	24.00	26.00	26.00	24.00
Lower grades....lb.	.07½	.08	.07½	.08	.07½	.08	.08	.07½
Madder, Dutch....lb.	.22	.25	.22	.25	.22	.25	.25	.22
Magnesite, calc, 500 lb bbl...ton	50.00	60.00	50.00	60.00	50.00	60.00	60.00	50.00

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those for April, 1931 and about 20 per cent of those for April, 1930. For the four months, January-April of this year the tag sales in the 13 Southern States were 60 per cent of the sales for the same four months of last year and 42 per cent of the sales for 1930. The best showing was made in the states of Virginia, North Carolina, South Carolina, Georgia, Florida, Missouri and Texas. The sales for the remaining states were less than 50 per cent of the sales for the same period last year. The largest decline was noted in the State of Arkansas, with sales of only 26 per cent of those for last season. The tag sales in the three Mid-western States for the first four months of 1932 were only 36 per cent of the sales for the same months of 1931 and 29 per cent of the sales for the first four months of 1930. The sales for Kansas were 99 per cent of the sales for the four months, January-April, while the sales for Illinois were only 44 per cent and Indiana sales were 34 per cent of the sales for the same period last year. The only encouraging angle to the situation is that, generally speaking, manufacturers have refrained from producing goods without any thought to marketing them and production has been in fairly close alignment with sales.

Phosphate — Shipments for domestic consumption were reported to be at a very low ebb. Consumption internationally has declined sharply from the levels reached in 1929 as shown by the reduction in Tunisian shipments during 1931. The statistics quoted below give a detailed record of the 1931 exports by countries of destination.

Countries of Destination	*Metric Tons*
France	741,922
Italy	271,186
England	173,434
Netherlands	160,421
Belgium	140,477
Spain	100,892
Portugal	90,425
Germany	32,894
Ireland	22,065
Greece	20,860
Denmark	8,300
Sweden	8,179
Poland	4,120
Yugoslavia	3,850
Norway	2,042
French Colonies	1,600
British Colonies	1,110
Algeria	690

Potash — The foreign representative in this country for the potash producers announced a complete downward revision of prices early in the month. All salts will be sold on a flat basis with no extra charge if they test higher than guaranteed minimum; pro rata allowance if they test below minimum. In many cases it will mean a price reduction ranging up to $1 or more per ton of 2,000 pounds due to the fact that these salts frequently test well above the minimum. The price of high grade kainit has been

	Current Market	1932 Low	1932 High	1931 High	1931 Low	1930 High	1930 Low
Magnesium							
Magnesium Carb, tech, 70 lb bags NY lb.	06	06½	.06	.06½	.06	.06½	.06½	.06
Chloride flake, 375 lb. drs c-l wks ton	35.00	36.00	35.00	36.00	35.00	36.00	36.00	36.00
Imported shipment ton	31.75	33.00	31.75	33.00	31.75	33.00	33.00	31.75
Fused, imp, 900 lb bbls NY ton	.....	31.00	.....	31.00	.....	31.00	31.00	31.00
Fluosilicate, crys, 400 lb bbls wks lb.	.10	.10½	.10	.10½	.10	.10½	.10½	.10
Oxide, USP, light, 100 lb bbls lb.	.....	.42	.....	.42	.....	.42	.42	.42
Heavy, 250 lb bbls lb.	.....	.50	.....	.50	.....	.50	.50	.50
Peroxide, 100 lb cs lb.	1.00	1.25	1.00	1.25	1.00	1.25	1.25	1.00
Silicofluoride, bbls lb.	.09½	.10½	.09¾	.10½	.09½	.10½	.10½	.09½
Stearate, bbls lb.	.24	.26	.24	.26	.24	.26	.26	.25
Manganese Borate, 30%, 200 lb bbls lb.	.....	.19	.....	.19	.....	.19	.19	.19
Chloride, 600 lb casks lb.	.07½	.08½	.07½	.08½	.07½	.08½	.08½	.07½
Dioxide, tech (peroxide) drs lb.	.03½	.06	.03½	.06	.03½	.06	.06	.03½
Manganese Ore, cents per unit	.18	.23	.18	.23	.....	.....	.....	.....
Sulfate, 550 lb drs NY lb.	.07	.08	.07	.08	.07	.08	.08	.07
Mangrove 55%, 400 lb bbls lb.	.....	.04	.....	.04	.03½	.04	Nom.	.03½
Bark, African ton	24.75	25.00	24.00	25.00	23.00	29.75	33.00	29.75
Marble Flour, bulk ton	14.00	15.00	14.00	15.00	14.00	15.00	15.00	14.00
Mercurous chloride lb.	.....	.93	.....	.93	.93	2.05	2.05	2.05
Mercury metal..... 76 lb flask	.....	64.00	64.00	74.50	64.00	106.00	124.50	106.00
Meta-nitro-aniline lb.	.67	.69	.67	.69	.67	.69	.69	.67
Meta-nitro-para-toluidine 200 lb. bbls lb.	1.40	1.55	1.40	1.55	1.40	1.55	1.55	1.50
Meta-phenylene-diamine,300 lb. bbls lb.	.80	.84	.80	.84	.80	.84	.84	.80
Meta-toluene-diamine, 300 lb bbls lb.	.67	.69	.67	.69	.67	.69	69	.67
Methanol								
Methanol, (Wood Alcohol), 95% gal.	.33	.35	.33	.35	.33	.37	.48	.35
97% gal.	.34	.39	.34	.39	.34	.43	.49	.39
Pure, Synthetic drums cars gal.	.39½	.41½	.39½	.41½	.39½	.42½	.50	.42½
Synthetic tanks gal.	.....	.35½	.....	.35½	.35½	.40½	.50	.40½
Methyl Acetate, drums gal.	.....	Nom.	.....	Nom.	.....	Nom.	Nom.	Nom.
Acetone, gal.	.50	.55	.50	.55	50	.70	.77	.65
Anthraquinone, lb.	.85	.95	.85	.95	.85	.95	.85	.70
Cellosolve, (See Ethylene Glycol Mono Methyl Ether)	.....	.....	.....	.....	.....	.....	.....	.....
Chloride, 90 lb cyl lb.	.45	.45	.45	.45	.45	.45	.45	.45
Furoate, tech., 50 gal. dr., lb.	.....	50	.....	.50	.....	.50	.50	.50
Mica, dry grd. bags wks lb.	65.00	80.00	65.00	80.00	65.00	80.00	80.00	65.00
Wet, ground, bags wks lb.	110.00	115.00	110.00	115.00	110.00	115.00	115.00	110.00
Michler's Ketone, kegs lb.	.....	3.00	.....	3.00	.....	3.00	3.00	3.00
Monochlorobenzene, drums see, Chorobenzene, mono lb.								
Monomethylparaminosufate 100 lb drums lb.	3.75	4.00	3.75	4.00	3.75	4.00	4.00	3.75
Montan Wax, crude, bags lb.	.05½	.07	.05½	.07	.05½	.07	.07	.06
Myrobalans 25%, liq bbls b	.03½	.04½	.03½	.04½	.03½	.04½	.04½	.03½
50% Solid, 50 lb boxes lb.	.05	.05½	.05	.05½	.05	.05½	.05½	.05
J1 bags ton	34.00	35.00	34.00	35.00	34.00	35.00	41.00	34.00
J 2 bags ton	18.00	18.50	15.25	18.50	15.50	22.50	26.50	19.75
R 2 bags ton	16.00	16.50	14.75	16.50	16.00	20.00	27.50	19.00
Naphtha, v. m. & p. (deodorized) bbls gal.	.12	.14	.12	.14	.12	.18	.16	.16
Naphthalene balls, 250 lb bbls wks lb.	.....	.04½	.03¾	.04¼	.03¼	.04¼	.05½	.03¾
Crushed, chipped bgs wks lb.	.....	.04	.....	.04	.....	.04	.04½	.04
Flakes, 175 lb bbls wks lb.	.....	.03¼	.....	.03¼	.....	.03¼	.05	.03¼
Nickel Chloride, bbls kegs lb.	.18	.20	.18	.20	.18	.21	.21	.20
Oxide, 100 lb kegs NY lb.	.35	.37	.35	.40	.37	.40	.40	.37
Salt bbl. 400 bbls lb NY lb.	.10½	.13	.10½	.13	.10½	.13	.13	.10½
Single, 400 lb bbls NY lb.	.10½	.12	.10½	.12	.10½	.12	.13	.10½
Metal ingot lb.	.35	.35	.35	.35	.35	.....	.....	.....
Nicotine, free 40%, 8 lb tins, cases lb.	1.25	1.30	1.25	1.30	1.25	1.30	1.30	1.25
Sulfate, 10 lb tins lb.	.98½	1.20	.98½	1.20	.98½	1.20	1.20	.98½
Nitre Cake, bulk ton	11.00	12.00	11.00	12.00	12.00	14.00	18.00	12.00
Nitrobenzene, redistilled, 1000 lb drs wks lb.	.09	.09½	.09	.09½	.09	.09½	.09½	.09
Nitrocellulose, c-l-l-cl, wks lb.	.25	.36	.25	.36	.25	.36	.36	.25
Nitrogenous Material, bulk unit	1.35	1.40	1.35	1.55	1.50	2.70	3.40	2.50
Nitronaphthalene, 550 lb bbls lb.	.....	.25	.....	.25	.....	.25	.25	.25
Nitrotoluene, 1000 lb drs wks lb.	.14	.15	.14	.15	.14	.15	.15	.14
Nutgalls Aleppy, bags lb.	.....	.18	.....	.18	.16	.18	.16½	.16
Chinese, bags lb.	.17	.18	.17	.18	.17	.18	.13	.12
Oak Bark, ground ton	30.00	35.00	30.00	35.00	30.00	35.00	35.00	30.00
Whole ton	20.00	23.00	20.00	23.00	20.00	23.00	23.00	20.00
Orange-Mineral, 1100 lb casks NY lb.	.09½	.10	.09½	.10	.10½	.13	.13	.11¼
Orthoaminophenol, 50 lb kgs lb.	2.15	2.25	2.15	2.25	2.15	2.25	2.25	2.15
Orthoanisidine, 100 lb drs lb.	2.50	2.60	2.50	2.60	2.50	2.60	2.60	2.50
Orthochlorophenol, drums lb.	.50	.65	.50	.65	.50	.65	.65	.50
Orthocresol, drums lb.	.18	.22	.18	.22	.18	.25	.35	.18
Orthodichlorobenzene, 1000 lb drums lb.	.07	.10	.07	.10	.07	.10	.10	.07
Orthonitrochlorobenzene, 1200 lb drs wks lb.	.28	.29	.28	.29	.28	.33	.33	.30
Orthonitrotoluene, 1000 lb drs wk lb.	.16	.18	.16	.18	.16	.18	.18	.16
Orthonitrophenol, 350 lb dr lb.	.85	.90	.85	.90	.85	.90	90	.85
Orthotoluidine, 350 lb bbl 1c-1 lb.	.20	.22	.20	.22	.25	.30	.30	.25

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reduced in price from $12.65 to $12 per ton, and sulfate of potash from $48.25 to $47.50. Summer discounts on salts for prompt shipment and equal monthly shipments from June to September, inclusive, have been increased 1 per cent over last year, namely 12 and 11 per cent, as against 11 and 10 per cent, respectively. There has also been added a special discount of 2 per cent on all orders placed prior to June 1 for shipment May to September, inclusive. This discount will also apply to orders placed prior to July 1 for shipment from Europe between July 1 and April 30, 1933. The extra fixed charge previously in effect on salts sold and delivered from stocks maintained in this country has been removed. The buyer will only pay the usual wharfage and handling charges and in addition the handling out charge. Spot prices for domestic potash muriate, 95-98 per cent KCL, minimum 95 per cent, were issued by the domestic producers last month also. Quotations are $40.50 per ton, in bulk, and $42.30 per ton, in bags, c. i. f. Atlantic and Gulf ports. Discounts allowed are as follows: May-June shipment, 14 per cent; July, 7 per cent; August, 6 per cent; September, 5 per cent; October, 4 per cent; November, 3 per cent; and December, 2 per cent. Special terms are available on contracts covering annual requirements.

Rosin — Movement in the primary centers was of a very conservative character and most grades were lower as shown in the prices. Some improvement is hoped for in the export market as stocks abroad are said to be only approximately half of what they were at this time a year ago. The fundamental conditions affecting the rosin markets are outlined in a recent report of the Tariff Commission. The principal domestic uses of rosin in the order of their importance are (1) in sized paper, (2) in paint and varnishes and (3) in soaps. Paper manufacture usually takes the lowest, paints and varnishes the highest and soap making the medium grades. There is considerable overlapping, however, as the better grades and the poorer varnish grades are used in soaps. Demand has been increasing in the paper industry and, to a less extent, in the paint and varnish industry, but except for an upward trend in 1929, it has been decreasing in the soap industry because of the substitution of white for yellow laundry soaps. The quantity of rosin actually used in soaps in the U. S. subsequent to 1914 and the quantity which would have been used if its consumption, instead of decreasing, had increased to the same extent as did the total consumption of oils, are shown in the

	Current Market	1932 Low	1932 High	1931 High	1931 Low	1930 High	1930 Low
Orthonitroparachlorphenol, tins ....lb.	.70	.75	.70	.75	.70	.75	.75	.70
Osage Orange, crystals.....lb.	.16	.17	.16	.17	.16	.17	.17	.16
51 deg. liquid.....lb.	.07	.07½	.07	.07½	.07	.07½	.07½	.07
Powdered, 100 lb bags.....lb.	.14½	.15	.14½	.15	.14½	.15	.15	.14½
Paraffin, refd, 200 lb cs slabs 123-127 deg. M. P.....lb.	.02½	.03	.02½	.03	.03½	.03	.04½	.03½
128-132 deg. M. P.....lb.	.03½	.03½	.....	.03½	.03½	.03½	.06½	.03½
133-137 deg. M. P. .....lb	.04½	.04½	.04½	.04½	.04½	.04½	.07½	.04½
Para Aldehyde, 110-55 gal drs..lb.	.20½	.23	.20½	.23	.20½	.23	.23	.20½
Aminoacetanilid, 100 lb bg..lb.	.52	.60	.52	.60	.52	.60	1.05	.52
Aminohydrochloride, 100 lb kegs.....lb	1.25	1.30	1.25	1.30	1.25	1.30	1.30	1.25
Aminophenol, 100 lb kegs..lb.	.78	.80	.78	.80	.82	.86	1.02	.92
Chlorophenol, drums.....lb.	.50	.65	.50	.65	.50	.65	.65	.50
Coumarone, 330 lb drums. lb.	.....	.....	.....	.....	.....	.....	.....	.....
Cymene, refd, 110 gal dr. .gal.	2.25	2.50	2.25	2.50	2.25	2.50	2.50	2.25
Dichlorobensene, 150 lb bbls wks.....lb.	.15½	.16	.15½	.16	.15½	.20	.20	.17
Nitroacetanilid, 300 lb bbls.lb.	.45	.52	.45	.52	.45	.55	.55	.50
Nitroaniline, 300 lb bbls wks .....lb.	.48	.55	.48	.55	.48	.55	.55	.48
Nitrochlorobensene, 1200 lb drs wks.....lb.	.23	26	.23	.26	.23	.26	.26	.23
Nitro-orthotoluidine, 300 lb bbls.....lb.	2.75	2.85	2.75	2.85	2.75	2.85	2.85	2.75
Nitrophenol 185 lb bbls....lb.	.45	50	.45	.50	.45	.50	.50	.45
Nitrosodimethylaniline, 120 lb. bbls.....lb.	.92	.94	.92	.94	.92	.94	.94	.92
Nitrotoluene, 350 lb bbls....lb.	.29	.31	.29	.31	.29	.31	.31	.29
Phenylenediamine, 350 lb bbls .....lb.	1.15	1.20	1.15	1.20	1.15	1.20	1.20	1.15
Toluenesulfonamide, 175 lb bbls.....lb.	.70	.75	.70	.75	.70	.75	.75	.70
Toluenesulfonchloride, 410 lb bbls wks.....lb.	.20	.22	.20	.22	.20	.22	.22	.20
Toluidine, 350 lb bbls wk...lb.	.42	.43	.42	.43	.40	.44	.40	.38
Paris Green, Arsenic Basis 100 lb kegs.....lb.	.....	.24	.24	.27	.....	.27	.27	.27
250 lb kegs.....lb.	.....	.23	.23	.25	.25	.26	.25	.25
Persian Berry Ext., bbls.....lb.	.25	Nom.	.25	Nom.	.25	Nom.	Nom.	.25
Pentasol (see Alcohol, Amyl)...								
Pentasol Acetate (see Amyl Acetate)								
Petrolatum, Green, 300 lb bbl.lb.	.02	.02½	.02	.02½	.02	.02½	.02½	.02
Phenol, 250-100 lb drums.....lb.	.14½	.15	.14½	.15	.14½	.15	.15	.14½
Phenyl - Alpha - Naphthylamine, 100 lb kegs.....lb.	.....	1.35	.....	1.35	.....	1.35	1.35	1.35
Phenylhydrazine Hydrochloride .....lb.	2.90	3.00	2.90	3.00	2.90	3.00	3.00	2.90
Phosphate								
Phosphate Acid (see Superphosphate)								
Phosphate Rock, f.o.b. mines Florida Pebble, 68% basis..ton	3.10	3.25	3.10	3.25	3.10	3.25	3.15	3.00
70% basis.....ton	3.75	3.90	3.75	3.90	3.75	3.90	4.00	3.75
72% basis.....ton	4.25	4.35	4.25	4.35	4.25	4.35	4.50	4.25
75-74% basis.....ton	5.25	5.50	5.25	5.50	5.25	5.50	5.50	5.25
75% basis.....ton	.....	5.75	.....	5.75	.....	5.75	5.75	5.75
77-80% basis.....ton	.....	6.25	.....	6.25	.....	6.25	6.25	6.25
Tennessee, 72% basis.....ton	.....	5.00	.....	5.00	.....	5.00	5.00	5.00
Phosphorous Oxychloride 175 lb cyl .....lb.	.18	.20	.18	.20	.18	.20	.25	.18
Red, 110 lb cases.....lb.	.43	.46	.43	.46	.42	.46	.42	.37½
Yellow, 110 lb cases wks..lb.	.31	.37½	.31	.37½	.31	.37½	.37½	.31
Sesquisulfide, 100 lb cs.....lb.	.38	.44	.38	.44	.38	.44	.44	.44
Trichloride, cylinders.....lb.	.18	.20	.18	.20	.18	.20	.25	.18
Phthalic Anhydride, 100 lb bbls wks.....lb.	.15	.16	.15	.16	.15	.16	.20	.15
Pigments Metallic, Red or brown bags, bbls, Pa. wks.....ton	37.00	45.00	37.00	45.00	37.00	45.00	45.00	37.00
Pine Oil, 55 gal drums or bbls Destructive dist.....lb.	.61	.63	.61	.63	.61	.64	.64	.63
Prime bbls.....bbl.	8.00	10.60	8.00	10.60	8.00	10.60	10.60	8.00
Steam dist. bbls.....gal.	.59	.61	.54	.61	.54	.70	.70	.65
Pitch Hardwood, wks.....ton	35.00	45.00	35.00	45.00	35.00	45.00	45.00	35.00
Plaster Paris, tech, 250 lb bbls .....bbl.	3.30	3.50	3.30	3.50	3.30	3.50	3.50	3.30
Platinum, Refined .....oz.	37.50	38.00	37.50	38.00	38.00	38.00	.....	.....
Potash								
Potash, Caustic, wks, solid...lb.	.06½	.06½	.06½	.06½	.06½	.06½	.06½	.06½
flake .....lb.	.0705	08	.0705	.08	.0705	.08	.08	.0705
Potash Salts, Rough Kainit 12.4% basis bulk.....ton	.....	9.20	.....	9.20	.....	9.20	9.20	9.10
14% basis.....ton	.....	9.70	.....	9.70	.....	9.70	9.70	9.60
Manure Salts.....								
20% basis bulk.....ton	.....	12.00	12.00	12.65	.....	12.65	12.65	12.50
30% basis bulk.....ton	.....	19.15	.....	19.15	.....	19.15	19.15	18.95
Potassium Acetate.....lb.	.27	.28	.27	.28	.27	.30	.30	.27
Potassium Muriate, 80% basis bags.....ton	.....	37.15	.....	37.15	.....	37.15	37.15	36.75
Pot. & Mag. Sulfate, 48% basis bags.....ton	.....	27.80	.....	27.80	.....	27.80	27.80	27.50
Potassium Sulfate, 90% basis bags.....ton	.....	47.50	47.50	48.25	....	48.25	48.25	47.75
Potassium Bicarbonate, USP, 320 lb bbls.....lb.	.07½	.09	.07½	.09	.07½	.10	.10	.09½
Bichromate Crystals, 725 lb casks.....lb.	.08	.08½	.08	.08½	.08	.09	.09½	.08½
Powd., 725 lb cks wks....lb.	.13	.13½	.13	13½	.13	.13	.13½	.13

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tabulation below. In making this estimate, the consumption of rosin in soap making in 1914 is taken as the base. The trend from yellow to white laundry soap began before 1914, however, 290,000,000 pounds of rosin being used in 1909 as compared with 185,000,000 pounds in 1914.

Year—	(Thousands of lbs.) Amount of rosin used in soap		Difference
1919	119,529	*203,841	84,312
1924	104,956	*298,349	193,393
1925	140,615	*318,733	178,118
1926	118,257	*335,411	217,154
1927	100,227	*336,913	266,686
1928	92,777	*368,766	275,989
1929	114,300	*387,297	272,987

*Amount of rosin which would have been used in soap if its use had increased, compared with 1914, to the same extent as the use of oils.

Soda Ash — A firm tone prevailed despite the fact that tonnages have declined sharply even from the levels reached one or two months ago. Of the March exports of 2,098,373 pounds, Mexico was the largest buyer, taking 626,868 pounds, while 382,655 pounds moved to Canada, 374,400 pounds to Cuba, 154,550 pounds to Argentina, 114,240 pounds to Peru, 34,872 pounds to Denmark, 53,450 pounds to Sweden, 67,200 pounds to Hong Kong, 49,380 pounds to Netherland East Indies, 35,900 pounds to Australia, and New Zealand, 31,880 pounds.

Soda Caustic — Consumers were reported to be holding shipments to very small quantities and volume was off considerably from the average for the past three or four months. Prices were unaltered. Of the March exports of 9,202,955 pounds, Japan purchased 3,096,955 pounds, Mexico 1,796,588 pounds, Canada 709,438 pounds, Netherlands West Indies 633,000 pounds, Cuba 920,237 pounds, and Colombia 184,479 pounds.

Sodium Cyanide — A slight, but nevertheless noticeable pick-up occurred in the plating lines, caused principally by the higher rate of production in the automobile centers. Further improvement is looked for in the next 30 days, prices holding firm. Of the March imports of 1,099,523 pounds, France shipped 67,200 pounds, Germany 252,000 pounds, and Canada 780,323 pounds. Of the March exports of 64,751 pounds, Peru contracted 33,600 pounds, Colombia 2,480 pounds, Chile 186 pounds, Bolivia 22,400 pounds, Canada 4,085 pounds, and Nicaragua 2,000 pounds.

Sodium Metasilicate — Producers announced an important price reduction on May 23. As of that date the price in carload lots was reduced from $3.25 to $2.85, f.o.b. nearest producing works. In less carload quantities proportionate reductions were also effected.

	Current Market	1932 Low	1932 High	1931 High	1931 Low	1930 High	1930 Low
Binoxalate, 300 lb bbls....lb.	.14	.14	.17	.14	.17	.17	.14
Bisulfate, 100 lb kegs....lb.	.16	.16	.30	.16	.30	.30	.30
Carbonate, 80-85% calc. 800 lb casks....lb.	.0475	.0475	.05	.04½	.07½	.05½	.05½
Chlorate crystals, powder 112 lb keg wks....lb.	.08	.08	.08½	.08	.08½	.09	.08
Chloride, crys bbls....lb.	.04	.04	.04½	.04	.06	.06	.05½
Chromate, kegs....lb.	.23	.23	.28	.23	.28	.28	.23
Cyanide, 110 lb. cases....lb.	.55	.55	.57½	.55	.57½	.57½	.55
Metabisulfite, 300 lb. bbl...lb.	.11	.11	.13	.11	.13	.13	.12
Oxalate, bbls....lb.	.20	.20	.24	.20	.24	.24	.20
Perchlorate, casks wks....lb.	.09	.09	.11	.09	.12	.12	.11
Permanganate, USP, crys 500 & 100 lb drs wks....lb.	.16	.16	.16½	.16	.16½	.16½	.16
Prussiate, red, 112 lb keg...lb.	.....	.38	.38½	.35	.40	.40	.38
Yellow, 500 lb casks....lb.	.16½	.17	.16½	.21	.18½	.21	.21	.18½
Tartrate Neut, 100 lb keg..lb.	.....	.21	.....	.21	.....	.21	.21	.21
Titanium Oxalate, 200 lb bbls ....lb.	.21	.23	.21	.23	.21	.23	.23	.21
Propyl Furoate, 1 lb tins....lb.	.....	5.00	.....	5.00	.....	5.00	5.00	5.00
Pumice Stone, lump bags....lb.	.04	.05	.04	.05	.04	.05	.05	.04
250 lb bbls....lb.	.04½	.06	.04½	.06	.04½	.06	.06	.04½
Powdered, 350 lb bags....lb.	.02½	.03	.02½	.03	.02½	.03	.03	.02½
Putty, commercial, tubs..100 lb.	2.35	2.45	2.35	2.45	2.35	2.45	.03½	.03½
Linseed Oil, kegs....100 lb.	4.00	4.75	4.00	4.75	4.00	4.75	.05½	.05½
Pyridine, 50 gal drums....gal.	1.50	1.75	1.50	1.75	1.50	1.75	1.75	1.50
Pyrites, Spanish cif Atlantic ports bulk....unit	.12	.13	.12	.13	.12	.13½	.13½	.13
Quebracho, 35% liquid tks....lb.	.02½	.03	.02½	.03	.02½	.04	.04	.02½
450 lb bbls c-l....lb.	.03½	.03½	.03½	.03½	.03½	.03½	.03½	.03½
35% Bleaching, 450 lb bbl .lb.	.04	.05½	.04	.05½	.04	.05½	.04½	.05½
Solid, 63%, 100 lb bales cif..lb.	.....	.02½	.....	.02½	.02½	.05½	.05½	.05
Clarified, 64%, bales....lb.	.....	.03½	.....	.03½	.03½	.05½	.05½	.05½
Quercitron, 51 deg liquid 450 lb bbls....lb.	.05½	.06	.05½	.06	.05½	.06	.06	.05½
Solid, 100 lb boxes....lb.	.09½	.13	.09½	.13	.09½	.13	.13	.09½
Bark, Rough....ton	.....	14.00	.....	14.00	.....	14.00	14.00	14.00
Ground....ton	34.00	35.00	34.00	35.00	34.00	35.00	35.00	34.00
R Salt, 250 lb bbls wks....lb.	.40	.44	.40	.44	.40	.44	.45	.40
Red Sanders Wood, grd bbls..lb.	.....	.18	.....	.18	.....	.18	.18	.18
Resorcinol Tech, cans....lb.	.65	.70	.65	.70	.65	1.25	1.25	.90
Rosin Oil, 50 gal bbls, first run ....gal.	.43	.45	.43	.45	.47	.58	.58	.56
Second run....gal.	.47	.49	.47	.51	.51	.61	.61	.59
Rosin								
Rosins 600 lb bbls 280 lb...unit ex. yard N. Y.								
B	.....	3.00	3.00	3.60	3.25	4.95	7.75	5.35
D	.....	3.15	3.15	3.75	3.35	5.50	8.00	5.50
E	.....	3.45	3.45	4.00	3.45	5.90	8.17	5.52½
F	.....	3.65	3.65	4.10	3.70	6.20	8.45	5.55
G	.....	3.75	3.75	4.15	3.75	6.25	8.45	5.60
H	.....	3.95	3.90	4.20	3.80	6.30	8.55	5.60
I	.....	4.10	3.95	4.25	3.85	6.35	8.58	5.62½
K	.....	4.15	4.15	4.65	4.10	6.45	8.65	5.62½
M	.....	4.70	4.70	5.10	4.20	6.70	8.80	5.65
N	.....	5.45	5.45	6.05	4.85	6.95	8.95	6.05
WG	.....	5.50	5.50	6.45	6.15	8.15	9.25	6.85
WW	.....	5.85	5.85	6.55	6.45	8.90	9.85	7.85
Rotten Stone, bags mines....ton	24.00	20.00	24.00	20.00	24.00	20.00	30.00	18.00
Lump, imported, bbls....lb.	.05	.07	.05	.07	.05	.07	.07	.05
Selected bbls....lb.	.09	.12	.09	12	.09	.12	.12	.09
Powdered, bbls....lb.	.02	.05	.02	.05	.02	.05	.05	.02
Sago Flour, 150 lb bags....lb.	.04½	.05	.04½	.05	.04½	.05	.05	.04½
Sal Soda, bbls wks....100 lb	....	1 00	.....	1.00	.....	1.00	1.00	1.00
Salt Cake, 94-96% c-l wks..ton	13.00	14.00	13.00	15.50	14.00	19.00	24.00	15.50
Chrome....ton	12.00	13.00	12.00	14.50	13.00	17.00	25.00	14.50
Saltpetre, double refd granular 450-500 lb bbls....lb	.06½	.06½	.06½	.06¾	.06	.06¾	.06¾	.06½
Satin, White, 500 lb bbls....lb	..	.01½	.....	.01½	.....	.01½	.01½	.01½
Shellac Bone dry bbls....lb	.16½	.17	.16½	.26	.26	.29	.47	.28
Garnet, bags....lb	.15	.16	.15	.20	.19	.26	.40	.24
Superfine, bags....lb.	.10½	.11	.10½	.14	.16	.22	.39	.20
T. N. bags....lb.	.09½	.10	.09½	.13	.14½	.17	.34	.18
Schaeffer's Salt, k gs....lb.	.48	.50	.48	.50	53	.57	.57	.53
Silica, Crude, bulk mines....ton	8.00	11.00	8.00	11.00	8.00	11.00	11.00	8.00
Refined, floated bags....ton	22.00	30.00	22.00	30.00	22.00	30.00	30.00	22.00
Air floated bags....ton	.....	32.00	.....	32.00	.....	32.00	32.00	32.00
Extra floated bags....ton	32.00	40.00	32.00	40.00	32.00	40.00	40.00	32.00
Soapstone, Powdered, bags f. o. b mines....ton	15.00	22.00	15.00	22.00	15.00	22.00	22.00	15.00
Soda								
Soda Ash, 58% dense, bags c-l wks....100 lb.	.....	1.17½	.....	1.17½	.....	1.17½	1.40	1.40
58% light, bags....100 lb.	.....	1.15	.....	1.15	.....	1.15	1.34½	1.34½
Contract, bags c-l wks..100 lb.	.....	1.15	.....	1.15	1.15	1.15	1.32	1.32
Soda Caustic, 76% grnd & flake drums....100 lb.	.....	2.90	.....	2.90	.....	2.90	3.35	3.00
76% solid drs....100 lb.	.....	2.50	.....	2.50	.....	2.50	2.95	2.90
Sodium Acetate, tech....450 lb. bbls wks....lb.	.04½	.05	.04½	.05	.04½	06	05½	04
Arsenate, drums....lb.	.25	.35	.25	.35	.25	.35	19	18
Arsenite, drums....gal.	.50	.75	.50	.75	.50	.75	1.00	.50
Bicarb, 400 lb bbl....100 lb.	.....	2.25	.....	2.25	2.35	2.35	2.41	2.41

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Sodium Nitrate — The situation in the nitrogen field has become even more muddled than before due to the unexpected turn of events in Chile and the uncertainty surrounding the action of the Treasury Department on the question of alleged "dumping of sulfate in this country." In most quarters it was thought that a downward revision for both synthetic and Chilean nitrate was quite likely for the next season. While attempts at reviving the old international cartel were made previous to the Chilean revolution it is now thought improbable that anything constructive can be done. A sharp drop occurred in the U. S. imports nitrogenous fertilizer materials during the first quarter of 1932 as compared with entries during the corresponding period of 1931. All commodities for which specific data are available showed a decline with the exception of ammonium sulfate. The following tables show imports by commodities with particulars of the ammonium sulfate receipts by countries of shipment.

Nitrogenous Fertilizer Imports

	First Quarter	
Commodity	*1931*	*1932*
	(Long tons)	
Ammonium sulfate	25,419	63,049
Ammonium-sulfate-nitrate	1,487	75
Calcium cyanamide or lime nitrogen	26,252	19,945
Calcium nitrate	22,914	3,495
Guano	5,482	3,233
Dried blood	3,642	1,945
Sodium nitrate	234,425	42,595
Urez and calurea	2,665	1,782
Other nitrogenous	22,695	5,266

Ammonium Sulfate: Countries of Shipment for U. S. Imports

	First Quarter 1932
	(Long tons)
Belgium	18,751
France	3,644
Germany	2,255
Netherlands	32,030
United Kingdom	1,965
Canada	2,923
Mexico	630
Japan	851

Synthetic Dyes — With both the textile and the tanning trades operating at severely curtailed schedules the demand for dyes was light, but prices were firmly held on nearly all items. Imports of synthetic dyes during April totaled 300,144 pounds and had a value of $259,425, according to the Dept. of Commerce and the U. S. Tariff Commission. Imports in the same month last year amounted to 502,248 pounds and were valued at $435,848. Total imports for the first four months of 1932 were 1,511,254 pounds, valued at $1,298,264, compared with 1,355,344 pounds, valued at $1,178,174, which came in during the corresponding period in 1931.

Origin

	—Percentages—	
	1932	*1931*
	April	*April*
Germany	69.6	59.02
Switzerland	29.3	39.94
England	1.0	39.94
England	1.0	1.04
France	.1	....

	Current Market	1932 Low	1932 High	1931 High	1931 Low	1930 High	1930 Low
Bichromate, 500 lb cks wks. lb.	.05	.05½	.05	.05½	.05	.07½	.07	.07
Bisulfite, 500 lb bbl wks. . . . lb.	....	.04	.....	.04	.....	.04	.04	.04
Chlorate, ... wks. . lb.	.05½	.07½	.05½	.07½	.05½	.07½	.08	.05½
Chloride, technical . . . . . ton	12.00	13.00	12.00	13.00	12.00	13.00	13.00	12.00
Cyanide, 96-98%, 100 & 250 lb drums wks. . . . . lb.	.16	.17	.16	.17	.16	.17	.20	.16
Fluoride, 300 lb bbls wks. . . lb.	.07	.07½	.07	.07½	.07	.08½	.09	.08½
Hydrosulfite, 200 lb bbls f. o. b. wks. . . . . lb.	.22	.24	.22	.24	.22	.24	.24	.22
Hypochloride solution, 100 lb cbys. . . . . lb.	.....	.05	.....	.05	.....	.05	.05	.05
Hyposulfite, tech, pea cyrs 375 lb bbls wks. . . . . 100 lb.	2.40	3.00	2.40	3.00	2.40	3.00	3.00	2.40
Technical, regular crystals 375 lb bbls wks. . . . 100 lb.	2.40	2.65	2.40	2.65	2.40	2.65	2.65	2.50
Metanilate, 150 lb bbls. . . . lb.	.44	.45	.44	.45	.44	.45	.45	.44
Metasilicate, c-l, wks. . . 100 lb.	.....	4.00	.....	4.00	.....	4.00	.....	.....
Monohydrate, bbls. . . . . lb.	.....	.02½	.....	.02½	.....	.02½	.02½	.02½
Naphthionate, 300 lb bbl. . . lb.	.52	.54	.52	.54	.52	.54	.57	.52
Nitrate, 92%, crude, 200 lb bags c-1 NY. . . . . 100 lb.	.....	1.73½	.....	1.73½	1.73½	2.07	2.22½	1.99
Nitrite, 500 lb bbls spot. . . . lb.	.07½	.08	.07½	.08	.07½	.08	.08	.07
Orthochlorotoluene, sulfonate, 175 lb bbls wks. . . . . lb	.25	.27	.25	.27	.25	.27	.27	.25
Perborate, 275 lb bbls. . . . . lb.	.1b	.20	.18	.20	.18	.20	.20	.18
Phosphate, di-sodium, tech. 310 lb bbls. . . . . 100 lb.	2.65	2.75	2.65	2.75	2.50	3.00	3.25	2.65
tri-sodium, tech, 325 lb bbls. . . . . 100 lb.	.....	3.20	.....	3.20	3.15	3.50	4.00	3.25
Picramate, 100 lb kegs. . . . . lb.	.69	.72	.69	.72	.69	.72	.72	.69
Prussiate, Yellow, 350 lb bbl wks. . . . . lb.	.11½	.12	.11½	.12	.11½	.12	12½	.11½
Pyrophosphate, 100 lb keg. . lb.	.15	.20	.15	.20	.15	.20	.20	.15
Silicate, 60 deg 55 gal drs, wks . . . . . 100 lb.	1.65	1.70	1.65	1.70	1.65	1.70	1.70	1.6
40 deg 55 gal drs, wks . . . . . 100 lb.	.....	.75	.....	.75	.75	1.00	.80	.70
Silicofluoride, 450 lb bbls NY . . . . . lb.	.....	.06¾	.05½	.06¾	.04	.04½	.05½	.04
Stannate, 100 lb drums. . . . lb.	.17½	.18	.17½	.19	.18	.26	.43	.24
Stearate, bbls. . . . . lb.	.20	.25	.20	.25	.20	.25	.29	.20
Sulfanilate, 400 lb bbls. . . . . lb.	.16	.18	.16	.18	.16	.18	.18	.16
Sulfate Anhyd, 550 lb bbls c-1 wks. . . . . lb.	.02	.02½	.02	.02½	.02	.02½	.02½	.02½
Sulfide, 80% crystals, 440 lb bbls wks. . . . . lb.	.02½	.02¼	.02½	.02¼	.02½	.02½	.02½	.02½
62% solid, 650 lb drums 1c-1 wks. . . . . lb	.03	.03½	.03	.03¼	.03	.03½	.03½	.03
Sulfite, crystals, 400 lb bbls wks. . . . . lb.	.03	.03½	.03	.03¼	.03	.03½	.03½	.03
Sulfocyanide, bbls. . . . . lb.	.28	.35	.28	.35	.28	.35	.35	.28
Tungstate, tech, crystals, kegs . . . . . lb.	.80	.88	.80	.88	.80	.88	.88	.81
Solvent Naphtha, tanks. . . . . wks. . . . . gal.	.26	.28	.26	.28	.24	.38	.40	.30
Spruce, 25% liquid, bbls. . . . . lb.	.....	.01	.....	.01	.01	.01½	.01½	.01½
25% liquid, tanks wks. . . . . lb.	.....	.01	.....	.01	.....	.01	.01	.01
50% powd, 100 lb bag wks lb.	.02	.02½	.02	.02¼	.02	.02½	.02½	.02
Starch, powd., 140 lb bags . . . . . 100 lb.	2.34	2.44	2.34	2.67	2.57	3.20	4.02	3.42
Pearl, 140 lb bags. . . . . 100 lb.	2.54	2.64	2.54	2.84	2.57	3.00	3.92	3.32
Potato, 200 lb bags. . . . . lb.	.03¾	.04	.03¾	.06	.05½	.06	.06½	.05½
Imported bags. . . . . lb.	.04¾	.05	.04	.06¼	.05¾	.06½	.06½	.05¾
Soluble. . . . . lb.	.08	.08½	.08	.08½	.08	.08½	.08½	.08
Rice, 200 lb bbls. . . . . lb.	.07½	.08½	.07½	.10	.09	.10	.10	.09
Wheat, thick bags. . . . . lb.	.06½	.07	.06½	.07	.06½	.07	.07	.06½
Thin bags. . . . . lb.	.09½	10	.09½	.10	.09½	.10	.10	.09½
Strontium carbonate, 600 lb bbls wks. . . . . lb.	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½
Nitrate, 600 lb bbls NY. . . . lb.	.07	.07½	.07	.07½	.07	.09½	.09½	.09
Peroxide, 100 lb drs. . . . . lb.	.....	1.25	.....	1.25	.....	1.25	1.25	1.25

Sulfur

Sulfur Brimstone, broken rock, 250 lb bag c-1. . . . . 100 lb.	.....	2.05	.....	2.05	.....	2.05	2.05	2.05
Crude, f. o. b. mines. . . . . ton	18.00	19.00	18.00	19.00	18.00	19.00	19.00	18.00
Flour for dusting 99½%, 100 lb bags c-1 NY. . . . 100 lb.	.....	2.40	.....	2.40	.....	2.40	2.40	2.40
Heavy bags c-1. . . . . 100 lb.	.....	2.50	.....	2.50	.....	2.50	2.50	2.50
Flowers, 100%, 155 lb bbls c-1 NY. . . . . 100 lb.	.....	3.45	.....	3.45	.....	3.45	3.45	3.45
Roll, bbls 1c-1 NY. . . . . 100 lb.	2.65	2.85	2.65	2.85	2.65	2.85	2.85	2.65
Sulfur Chloride, red, 700 lb drs wks. . . . . lb.	.05	.05½	.05	.05½	.05	.05½	.05½	.05
Yellow, 700 lb drs wks. . . . . lb.	.03½	.04½	.03½	.04½	.03½	.04½	.04½	.03½
Sulfur Dioxide, 150 lb cyl. . . . lb.	.07	.07½	.07	.07½	.07	.07½	.07½	.07
Extra, dry, 100 lb cyl. . . . . lb.	.10	.12	.10	.12	.10	.12	.12	.10
Sulfuryl Chloride, ... lb.	.15	.40	.15	.40	.15	.40	.65	.10
Talc, Crude, 100 lb bgs NY. . . ton	12.00	15.00	12.00	15.00	12.00	15.00	15.00	12.00
Refined, 100 lb bgs NY. . ton	16.00	18.00	16.00	18.00	16.00	18.00	18.00	16.00
French, 220 lb bags NY. . . ton	18.00	22.00	18.00	22.00	18.00	22.00	22.00	18.00
Refined, white, bags. . . . ton	35.00	40.00	35.00	40.00	35.00	40.00	40.00	35.00
Italian, 220 lb bags NY. . . ton	40.00	50.00	40.00	50.00	40.00	50.00	50.00	40.00
Refined, white, bags. . . . ton	50.00	55.00	50.00	55.00	50.00	55.00	55.00	50.00
Superphosphate, 16% bulk, wks. . . . . ton	7.50	8.00	7.50	8.00	7.50	9.00	9.50	8.00
Triple bulk, wks. . . . . unit	.....	65	.....	.65	.....	.65	65	.65
Tankage Ground NY. . . . . unit	.....	1.40&10	1.40&10	1.50&10	1.50	3.20&10	4.00&10	3.20&10
High grade f.o.b. Chicago. unit	.....	1.50&10	.....	1.50&10	1.50	3.25&10	3.85&10	3.25&10
South American cif. . . . . unit	.....	2.25&10	.....	2.25&10	2.00	3.40&10	4.25&10	3.40&10
Tapioca Flour, high grade bgs. lb.	.03½	.05	.03½	.05	.03½	.05	.05½	.03
Medium grade, bags. . . . . lb.	.03	04	.03	04	.03	.04	.04½	.02½
Tar Acid Oil, 15%, drums. . . . gal.	.21	.22	.21	.22	.21	.25	.27	.24
25% drums. . . . . gal.	.23	.24	.23	.24	.23	.28	.30	.26

Prices Current and Comment

Purchasing Power of the Dollar: 1926 Average—$1.00 - 1931 Average $1.404 - Jan. 1931 $1.283 - May 1932 $1.63

Leading Dyes in April Imports

	Pounds
Vat golden yellow Gk double paste (single strength)	40,000
Vat printing black B paste	15,400
Ciba brown G paste	13,800
Paper bordeaux GGU	13,265
Vat blue green FFB double paste (single strength)	12,796

April imports of medicinals, photographic developers, intermediates, and other coaltar products amounted to 92,067 pounds, valued at $72,609, compared with 226,457 pounds, valued at $140,811, imported in the same month in 1931. Total imports in the first four months of this year were 324,386 pounds, valued at $242,153, and in the same period last year they were 506,877 pounds, valued at $250,884. Imports of color lakes during April amounted to 3,504 pounds, valued at $2,628. This brings the total for the first four months of the year to 8,143 pounds, with a value of $5,490. The total for the corresponding 1931 period was 2,771 pounds.

Superphosphates — Superphosphate production during March was 40 per cent less than March last year; the Northern area showing a reduction of 50 per cent and the Southern area a reduction of 25 per cent from last year, according to results of manufacturing operations reported to the National Fertilizer Association. Production amounted to 129,076 tons for the month, against 213,548 tons during March, 1931. Shipments during March totaled 291,438 tons, against 686,952 tons during the same month last year. Stocks on hand at the end of the month were 1,541,789 tons, as compared with 1,806,134 tons during March, 1931, a decrease of 15 per cent. Superphosphate shipments to consumers, dealers, etc., in March showed a decline of 58 per cent from March last year, while superphosphate in base and mixed goods shipped to mixers, other acidulators, consumers, dealers, etc., disclosed a decrease of 62 per cent from last year. Prices remained firm, however.

Sulfur — The price situation has remained unaltered in the face of a severe decline in consumption here and an increase in surface stocks. Actual business can only be compared with 1922. Due to the peculiar type of industry, however, price cuts are not likely to stimulate sales and therefore it is not expected that any concessions will be offered. Texas Gulf increased inventories in 1931 to $14,192,158 against $11,928,750 in 1930 and $8,731,960 in 1929. Freeport's inventories were $6,591,107 against $5,251,467 in 1930 and $4,036,855 in 1929. During the first three months of 1932 exports of brimstone from the U. S. totaled 84,530 long tons compared with 75,966 tons for the same period of 1931. Quantities and

	Current Market	1932 Low	1932 High	1931 High	1931 Low	1930 High	1930 Low
Terra Alba Amer. No. 1, bgs or bbls mills...100lb.	1.15	1.75	1.15	1.75	1.15	1.75	1.75	1.15
No. 2 bags or bbls...100lb.	1.50	2.00	1.50	2.00	1.50	2.00	2.00	1.50
Imported bags...lb.	.01⅛	.01¾	.01⅛	.01¼	.01⅛	.01¼	.01¾	.01⅛
Tetrachlorethane, 50 gal dr...lb.	.09	.09½	.09	.09½	.09	.09½	.09½	.09
Tetralene, 50 gal drs wks...lb.	.....	.20	.....	.20	.....	.20	.20	.20
Thiocarbanilid, 170 lb bbl...lb.	.25	.28½	.25	.28½	.25	.28½	.28½	.22
Tin								
Crystals, 500 lb bbls wks..lb.	.23	.24	.23	.24	.23	.28½	.34	.25
Metal Straits NY...lb.	.211	.21¼	.211	.22⅛	.21¾	.27	.38	.26
Oxide, 300 lb bbls wks...lb.	.....	.23	.....	.23	.23	.29	.42	.25
Tetrachloride, 100 lb drs wks ...lb.	.1555	.16	.1555	.165	.1605	.19½	.20½	.18½
Titanium Dioxide 300 lb bbl..lb	.20½	.21	.20½	.21	.20½	.22	.50	.21
Pigment, bbls...lb.	.06½	.07¾	.06½	.07¾	.06½	.07¾	.07¾	.06½
Toluene, 110 gal drs...gal.	.....	.35	.....	.35	.34	.35	.40	.35
8000 gal tank cars wks...gal.	.....	.30	.....	.30	.27	.30	.35	.30
Toluidine, 350 lb bbls...lb.	.88	.89	.88	.89	.88	.94	.94	.90
Mixed, 900 lb drs wks...lb.	.27	.32	.27	.32	.27	.32	.32	.27
Toner Lithol, red, bbls...lb.	.90	.95	.90	.95	.90	.95	.95	.90
Para, red, bbls...lb.	.....	.80	.....	.80	.....	.80	.80	.80
Toluidine...lb.	1.50	1.55	1.50	1.55	1.50	1.55	1.55	1.50
Triacetin, 50 gal drs wks...lb.	.32	.36	.32	.36	.32	.36	.36	.32
Trichlorethylene, 50 gal dr...lb.	.10	.10½	.10	.10½	.10	.10½	.10½	.10
Triethanolamine, 50 gal drs...lb.	.40	.42	.40	.42	.40	.42	.42	.40
Tricresyl Phosphate, drs...lb.	.25½	.26	.25½	.26	.26	.45	.45	.33
Triphenyl guanidine...lb.	.58	.60	.58	.60	.58	.60	.60	.58
Phosphate, drums...lb.	.50	.65	.50	.65	.50	.70	.70	.60
Tripoli, 500 lb bbls...100 lb.	.75	2.00	.75	2.00	.75	2.00	2.00	1.75
Tungsten, Wolframite,..per unit	10.40	11.00	10.40	11.75	11.00	11.75	.....	.....
Turpentine carlots, bbls...gal.	.45	.45½	.39	.45½	.36½	.57	.61½	.41
Wood Steam dist. bbls...gal.	.44	.45	.44	.45	.38	.61	.52	.36
Urea, pure, 112 lb cases...lb	.15	.17	.15	.17	.15	.17	.17	.15
Fert. grade, bags c.i.f...ton	....	82.60	.....	82.60	.....	82.60	108.00	108.00
c. i. f. S. points...ton	.....	82.60	.....	82.60	.....	82.60	109.30	109.30
Valonia Beard, 42%, tannin bags...ton	32.00	32.50	32.00	34.00	33.00	40.00	40.00	39.50
Cups, 30-31% tannin...ton	22.50	23.50	22.50	23.50	22.50	25.00	27.00	24.00
Mixture, bark, bags...ton	25.00	26.00	25.00	26.00	25.00	31.00	32.50	30.00
Vermillion, English, kegs...lb..	1.53	1.80	1.53	1.80	1.53	1.80	2.05	1.75
Vinyl Chloride, 16 lb cyl...lb.	.....	1.00	.....	1.00	.....	1.00	1.00	1.00
Wattle Bark, bags...ton	29.00	33.00	29.00	33.00	32.00	41.00	47.75	40.00
Extract 55%, double bags ex-dock...lb.	.05	.06½	.05	.06½	.05	.06½	.06½	.05⅞
Whiting, 200 lb bags, c-l wks ...100 lb.	.85	1.00	.85	1.00	.85	1.00	1.00	1.00
Alba, bags c-l NY...ton	.....	13.00	.....	13.00	.....	13.00	13.00	13 00
Gilders, bags c-l NY...100 lb.	.....	1.35	.....	1.35	.....	1.35	1.35	1.35
Xylene, 10 deg tanks wks. .gal.	.....	.29	.....	.29	.....	.29	.31	.28
Commercial, tanks wks...gal.	.....	.26	.....	.26	.24	.30	.33	.25
Xylidine, crude...lb.	.36	.37	.36	.37	.36	.37	.38	.37

Zinc

Zinc Ammonium Chloride powd., 400 lb bbls...100 lb.	5.25	5.75	5.25	5.75	5.25	5.75	5.75	5.25
Carbonate Tech, bbls NY..lb.	.10⅛	.11	.10½	.11	.10½	.11	.11	.10⅛
Chloride Fused, 600 lb drs. wks...lb.	.05¾	.06	.05¾	.06	.05¾	.06	.06	.05¾
Gran., 500 lb bbls wks...lb.	.05¾	.06	.05¾	.06	.05¾	.06	.06½	.05¾
Soln 50%, tanks wks...100 lb.	2.25	3.00	2.25	3.00	2.25	3.00	3.00	2.25
Cyanide, 100 lb drums...lb.	.38	.39	.38	.39	.38	.39	.41	.38
Dithiofuroate, 100 lb dr...lb.	.....	1.00	.....	1.00	.....	1.00	1.00	1.00
Dust, 500 lb bbls c-l wks...lb.	.041	.05	.041	.0525	.0515	.07	.11	.06
Metal, high grade slabs c-l NY...100 lb.	3.20	3.21	3.195	3.22½	3.50	4.45	6.45	4.10
Oxide, American bags wks..lb.	.06⅛	.07	.06½	.07	.06½	.07	.07⅛	.06½
French, 300 lb bbls wks...lb.	.09⅛	.11⅛	.09⅛	.11⅛	.09⅛	.11⅛	.11⅛	.09⅛
Perborate, 100 lb drs...lb.	.....	1.25	.....	1.25	.....	1.25	1.25	1.25
Peroxide, 100 lb drs...lb.	.....	1.25	.....	1.25	.....	1.25	1.25	1.25
Stearate, 50 lb bbls...lb.	.18½	.22	.18½	.22	.18½	.23	.26	.20
Sulfate, 400 bbl wks...lb.	.03	.03½	.03	.03½	.03	.03½	.03½	.03
Sulfide, 500 lb bbls...lb.	.13	.13½	.13	.13½	.13	.16½	.32	.16
Sulfocarbolate, 100 lb keg..lb.	.22	.24	.22	.24	.22	.30	.30	.28
Zirconium Oxide, Nat. kegs...lb.	.02½	.03	.02½	.03	.02½	.03	.03	.02½
Pure kegs...lb.	.45	.50	.45	.50	.45	.50	.50	.45
Semi-refined kegs...lb.	.08	.10	.08	.10	.08	.10	.10	.08

Oils and Fats

Castor, No. 1, 400 lb bbls...lb.	.09	.09½	.09	.10½	.10	.12	.13½	.11½
No. 3, 400 lb bbls...lb.	.09¾	.10½	.09¾	.10½	.09½	.11¼	.13	.11
Blown, 400 lb bbls...lb.	.12	.12½	.12	.12½	.12½	.14	.15	.12
China Wood, bbls spot NY...lb.	.07½	.07½	.07	.07½	.07	.07½	.13	.07
Tanks, spot NY...lb.	.06½	.06½	.06	.06½	.06	.07	.11⅛	.06
Coast, tanks,...lb.	.06⅜	.06½	.05⅝	.06½	.05½	.06½	.10½	.05½
Cocoanut, edible, bbls NY...lb.	.....	.10½	.....	.10½	.....	.10½	.10½	.10½
Ceylon, 375 lb bbls NY...lb.	.04⅜	.04½	.04⅜	.04½	.04⅜	.06½	.08½	.06⅜
8000 gal tanks NY...lb.	.03½	.03½	.03½	.03½	.03½	.06	.07	.05½
Cochin, 375 lb bbls NY...lb.	.05½	.06	.05½	.06	.05½	.07	.09½	.07½
Tanks NY...lb.	.04½	.05	.04½	.05	.04⅜	.05½	.08⅛	.07
Manila, bbls NY...lb.	.04⅜	.05	.04⅜	.05	.04⅜	.07	.08½	.06½
Tanks NY...lb.	.03⅜	.04	.03⅜	.04	.03⅜	.05½	.07⅛	.05⅜
Tanks, Pacific Coast...lb.	.....	.03½	.....	.03½	.03	.05	.07	.05⅛

Prices Current and Comment

Purchasing Power of the Dollar: 1926 Average—$1.00 - 1931 Average $1.404 - Jan. 1931 $1.283 - May 1932 $1.63

values with destinations of shipments of sulfur for these periods were as follows:

Country of Destination	*Jan.-Mar., 1931* *Long Tons*	*Value*
France	28,096	$683,842
Germany	15,440	360,089
Netherlands	4,600	110,400
Spain	2,036	45,568
United Kingdom	3,421	75,262
Other Europe	1,723	41,783
Canada	10,012	182,373
Mexico	1,748	38,300
Netherland West Indies	3,130	68,860
South America	2,750	57,750
Australia	.....	.....
New Zealand	.....	.....
Total	75,966	1,748,635

Country of Destination	*Jan.-Mar., 1932* *Long Tons*	*Value*
France	30,251	$688,432
Germany	15,003	345,520
Netherlands	3,300	75,900
Spain	2,200	52,800
United Kingdom	6,054	131,787
Other Europe	1,607	36,720
Canada	8,242	149,531
Mexico	3,105	67,732
Netherland West Indies	3,150	69,300
South America	4,385	93,890
Australia	6,050	129,250
New Zealand	1,100	23,100
Total	84,530	1,866,567

Turpentine — Trading in both the primary and local markets was of a very routine nature throughout the month. Offerings were light, particularly in the last half of the month and prices worked up to higher levels at the close.

	Month of April *1931*	*1932*
Total naval stores gums and resins	$1,216,405	$1,069,946
Rosin:—		
Gum *Barrels	69,428	90,790
Value	$639,704	$523,881
Wood *Barrels	15,599	13,048
Value	$124,287	$75,600
Gum spirits of turp.. Gallons	535,461	849,153
Value	$271,784	$364,986
Wood turpentine .. Gallons	88,996	97,995
Value	$43,230	$45,439
Tar and pitch of wood *Barrels	1,070	526
Value	$10,467	$4,462
Other gums and resins..Lbs.	473,985	344,069
Value	$126,933	$55,578

FATS AND OILS

The downward trend in prices of oils continued uninterrupted during May. No division was exempt and prices for most of the vegetable, fish, and animal oils went to new lows. Actual quotations, as of the close of the month, may be gotten from referring to the price columns. The Dept. of Commerce announces that, according to Census returns, the factory production of fats and oils (exclusive of refined oils and derivatives) during the three-month period ended March 31, 1932, was as follows: vegetable oils, 758,717,235 pounds; fish oils, 6,648,409 pounds; animal fats, 624,736,215 pounds; and greases, 87,147,619 pounds; a total of 1,477,249,478 pounds. Of the several kinds of fats and oils covered by this inquiry, the largest production, 519,709,194 pounds, appears for cottonseed. Next in order is lard with 488,678,547 pounds; tallow with 133,802,471 pounds; linseed oil with 99,783,339 pounds; coconut oil with 77,887,186 pounds; corn oil with 26,035,744 pounds.

	Current Market	1932 Low	1932 High	1931 High	1931 Low	1930 High	1930 Low
Cod, Newfoundland, 50gal bbls ..... gal.	.....	.30	.....	.30	.26	.48	.56	.46
Tanks NY ..... gal.	.28	.30	.28	.30	.24	.45	.62	.48
Cod Liver see Chemicals								
Copra, bags ..... lb.	.0205	.023	.0205	.0235	.0195	.0325	.046	.039
Corn, crude, bbls NY ..... lb.	.05½	.09	.05½	.09	.05½	.09	.10	.08½
Tanks, mills ..... lb.	.02⅞	.03	.02⅞	.03½	.03⅜	.07½	.08	.06½
Refined, 375 lb bbls NY.... lb.	.06¼	.07	.06½	.07	.06¼	.10½	.10½	.09½
Tanks ..... lb.	.08½	.08¼	.08½	.08¾	.08	.08¼	.10	.08
Cottonseed, crude, mill ..... lb.	.02⅜	.02¼	.02⅜	.03½	.03	.07	.07½	.06¼
Degras, American, 50 gal bbls NY ..... lb.	.02½	.03	.02½	.04	.03½	.04½	.04½	.03½
English, brown, bbls NY... lb.	.03	.03½	.03	.04	.03⅜	.05	.05	.04½
Light, bbls NY ..... lb.	.04	.04½	.04	.04½	.04	.05½	.05½	.05
Dog Fish, Coast Tanks..... gal.	.....	.32	.....	.32	.....	32	.34	.32
Greases								
Greases, Brown ..... lb.	.01½	.02	.01½	.02¼	.02	.04½	.06½	.04
Yellow ..... lb.	.01⅜	.02	.01⅜	.03	.02	.05	.07½	.03½
White, choice bbls NY..... lb	.02⅜	.03	.02⅜	.04½	.03½	.05⅞	.08½	.06
Herring, Coast, Tanks..... gal.	.....	Nom.	.....	Nom.	.....	Nom.	.....	.....
Horse, bbls ..... lb.	.05½	Nom.	.05½	Nom.	.05½	Nom.	Nom.	.05½
Lard Oil, edible, prime..... lb.	.08¼	.09	.08½	.10	.10¼	.13	.13¼	.12½
Extra, bbls ..... lb.	.05⅞	.06	.05¾	.07	.07	.10	.12	.10
Extra No. 1, bbls..... lb.	.05½	.06	.05½	.07	.06½	.09¼	.11	.09¼
Linseed, Raw, five bbl lots... lb.	.069	.07	.069	.074	.077	.102	.146	.096
Bbls c-l spot ..... lb.	.061	.066	.061	.066	.069	.098	.142	.092
Tanks ..... lb.	.055	.06	.055	.06	.063	.092	.134	.086
Menhaden Tanks Baltimore . gal.	.15½	.17	.15½	.20	.14	.22	.50	.21
Extra, bleached, bbls NY.. gal.	.38	.40	.38	.40	.38	.53	.70	.52
Light, pressed, bbls NY... gal.	.25	.27	.25	.34	.33	.38	.64	.36
Yellow, bleached, bbls NY. gal.	.36	.37	.36	.37	.30	.42	67	.38
Mineral Oil, white, 50 gal bbls ..... gal.	.40	.60	.40	.60	.40	.60	.60	.40
Russian, gal ..... gal.	.95	1.00	.95	1.00	.95	1.00	1.00	.95
Neatsfoot, CT, 20° bbls NY . lb.	.12½	.13	.12½	.13½	.13½	.16	.17½	.16½
Extra, bbls NY ..... lb	.05⅝	.06	.05¾	.07	.07	.10	.11½	.09½
Pure, bbls NY ..... lb.	.07⅞	.08	.07¾	.09	.09½	.12	.13½	.11½
Oleo, No. 1, bbls NY ..... lb.	.05⅜	.06	.05⅜	.07	.06⅜	.08	.12½	.08⅜
No. 2, bbls NY..... lb.	.05	.05½	.05	.06	.05½	.08	.11	.08⅛
No. 3, bbls NY ..... lb.	.....	.06¼	.....	.06¼	.06¼	.09	.10½	.09
Olive, denatured, bbls NY... gal.	.59	.61	.59	.65	.59	.80	1.00	.70
Edible, bbls NY ..... gal.	1.65	2.00	1.65	2.00	1.50	2.00	2.00	1.75
Foots, bbls NY ..... lb.	.04¼	.04½	.04¼	.05	.04½	.06¼	.08	.06
Palm, Kernel, Casks ..... lb.	.035	.04	.035	.04½	.04½	.06¼	.08½	.06
Lagos, 1500 lb casks..... lb.	.04	.05	.04	.05	.04	.06	.07⅜	.05½
Niger, Casks ..... lb.	.03½	.03½	.03½	.03½	.03½	.05½	.07½	.05½
Peanut, crude, bbls NY..... lb.	.02½	.02⅞	.02½	.04	.03¾	.05	Nom.	.....
Refined, bbls NY..... lb.	.08½	.09	.08½	.09	.08½	.14	.15	.12
Perilla, bbls NY ..... lb.	.05¾	.05½	.05¼	.05¾	.05½	.11	.14½	.10
Tanks, Coast ..... lb.	.....	.05	.....	.05	.05	.09	.11½	.08
Poppyseed, bbls NY..... gal.	1.70	1.75	1.70	1.75	1.70	1.75	1.75	1.70
Rapeseed, blown, bbls NY... gal.	.68	.70	.68	.70	.68	.73	1.00	.74
English, drms. NY..... gal.	.....	.75	.....	.75	.....	.75	.82	.75
Japanese, drms. NY..... gal.	.56	.58	.56	.58	.56	.58	.70	.56
Red, Distilled, bbls..... lb.	.06¼	.06⅜	.06½	.07	.07⅛	.09	.10⅛	.08⅛
Tanks ..... lb.	.05¾	.06	.05¾	.06	.06½	.08½	.09½	.07½
Salmon, Coast, 8000 gal tks..gal.	.....	.19	.....	.19	.19	.22	.44	.42
Sardine, Pacific Coast tks... gal.	.17	.17½	.17	.17½	.17	.19	.42	.18
Sesame, edible, yellow, dos... lb.	.08½	.09	.08½	.09	.08½	.10¾	.12	.09
White, dos ..... lb.	.10	.11	.10	.11	.10	.12	.12½	.10
Sod, bbls NY ..... gal..	.....	.40	.....	.40	.....	.40	.40	.40
Soy Bean, crude.....								
Pacific Coast, tanks..... lb.	.028	.03	.02½	.03½	.03⅛	.08	.09½	.07
Domestic tanks, f.o.b. mills, ... lb.	.....	.03	.03	.032	.032	.07	.08½	.07
Crude, bbls NY..... lb.	.04⅛	.05	.04¾	.05	.04¼	.08	.10¼	.10
Tanks NY ..... lb.	.04¼	.04¼	.04¼	.04½	.04¼	.08	.09¼	.09
Refined, bbls NY..... lb.	.058	.06	.058	.06	.058	.09	.13½	.13
Sperm, 38° CT, bleached, bbls NY ..... gal.	.68	.70	.68	.70	.68	.85	.85	.84
45° CT, bleached, bbls NY gal.	.63	.65	.63	.65	.63	.80	.80	.79
Stearic Acid, double pressed dist bags..... lb.	.07½	.08	.07½	.09	.08½	.11	.15	.13½
Double pressed saponified bags ..... lb.	.07	.07½	.07	.07½	.08	.12	.15½	.14½
Triple, pressed dist bags.. lb	.10½	.10½	.10½	.11	.11	.14	.17	.15½
Stearine, Oleo. bbls..... lb.	.03¾	.04	.03¾	.05	.05½	.08½	.09½	.08½
Tallow City, extra loose..... lb.	.02½	.03	.02½	.03½	.02½	.04	.07½	.04½
Edible, tierces..... lb.	.03½	.03½	.03½	.04	.03½	.06	.09½	.05½
Tallow Oil, Bbls, c-1 NY... lb.	.07	.07½	.07	.07½	.07	.08½	.11	.08½
Acidless, tanks NY..... lb.	.07½	.09	.07½	.09	.07½	.09	.10	.08½
Vegetable, Coast mats..... lb.	.06	Nom.	.06	Nom.	.06½	Nom.	Nom.	.06½
Turkey Red, single bbls..... lb.	.07	.09	.07	.09	.07	.10	.12	.10
Double, bbls..... lb.	.09	.11	.09	.11	.09	.10	.16	.13
Whale, bleached winter, bbls NY..... gal.	.....	.74	.....	.74	.....	.74	.74	.74
Extra, bleached, bbls NY.. gal.	.58	.60	.58	.60	.58	.77½	.76	.76
Nat. winter, bbls NY..... gal.	.53	.55	.53	.55	.53	.72	.73	.73

The Chemical Market-Place

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Index to Advertisers

Index to Advertisers

"We"—Editorially Speaking

Add to the new uses of cellophane: for wrapping dividend cheques. Why? So they can be seen, of course.

The address made by T. S. Adams before the M. C. A. at Atlantic City, carries us into the realms of fair minded citizens thrusting aside unjust criticisms for the more poignant duty of putting depression to rout. As Professor of political economy at Yale University since 1916, and having held posts in different economic situations, we can accept his message as one of most reliable intent and authoritative speech.

Our article on those twin metallic cousins "Selenium and Tellurium" last month failed to carry the information that it was abstracted from a paper presented before the Electrochemical Society at their meeting in Baltimore.

Said the society column of the "N. Y. Times" of April 18, under a White Sulphur Springs headline—"Among those seen on the bridal paths were G. Lee Camp and R. E. Dorland." To a man the Round Table at the Chemists' Club asked, "Doing *what*?"

Mr. Hartford, who writes on the salt cake market's ups and downs, spent four years as draftsman in the bridge industry, twelve years as engineer with the General Chemical Company, five years as engineer with Burkhardt & Sons Steel and Iron Works Company; and has contributed articles to many business magazines.

Formerly connected with the National Carbon Company and the Union Carbide and Carbon Company, T. M. McNiece is, at the present time, independently engaged in market analysis and the development of some definite economic studies. His thorough experience in industrial research, his knowledge of security analyses and economic trends, his contributions to numerous publications, and speeches made before different organization meetings, all of the same nature, make him doubly competent to ask "How Do You Estimate Chemical Demand?" at the same time warning that profitable distribution constitutes one of the most important business problems of the day. His paper was presented at a dinner meeting of the American Management Association's Industrial Conference in Cleveland recently.

We wonder if there is anything prophetic about *The American Perfumer's* use in the May issue of a photograph of the Capitol Building in Washington showing several inches of snow on the ground!

Rubber was the subject of a symposium held at the recent Cleveland regional meeting of the American Society of Testing Materials at which Dr. Norman Shepard read the paper on "Vulcanization" which is abstracted in this issue. Dr. Shepard is a thorough-going Yale product, having been born in New Haven, April 8th, 1890, received his Ph.D. there in June 1913, and having been a member of the Yale faculty until 1919. He is the Director of Chemical Research at the Firestone Tire & Rubber Co., and in addition to rubber problems is particularly interested in nitrogen compounds and industrial poisons.

If our own star market reporter covered chemicals as the star dramatic critic of any New York newspaper reviews a first night:

Triple-super Orange Phosphate—With a certain sense of smugness inspired by archaic instincts, I ran into that delightful fellow with the mien of a French marquis who once described the summer slackness in fertilizer demand as "bucolic gestation." We met in that drafty hallway presided over by a fine old Viking who remembers gratefully that Al Hawkes gave him a twenty dollar bill as a going away present. My *confrere d' arms* tipped me off that his boss had seen my boss lunching at the Drug Club with H. D. Ruhm, late of Chicago and later of Columbia, Tennessee. He speculated widely on what brought the big grinder of "rock" to the metropolis, and I was just mean enough not to tell him that it was a granddaughter out in the suburbs.

JULY, 1932

Brooks, B. T.—
has done research in the Philippines for the government, was a Fellow in Mellon Institute, was the chief chemist of the Commercial Research Corporation, and is, at present, doing consulting research work—he has something real to say about Research.

Swann, Theodore—
is in the habit of making up his own mind, and his conclusions about chemical selling are original and good reading.

Pierce, T. Raymond—
is a banker, and is human and chemically wise, delivered a real message to executives at Absecon which we will print next month.

Stoddard, W. J. "Dixie"—
than whom there is no than whicher expert on chemical dry cleaning, summarizes the chemicals used in this field.

The story of a young chemist in Chicago committing suicide because a girl jilted him raises the serious question, how could such a trivial matter drive him to such a tragic ending? We thought all our chemists were so occupied with heavy research programs as to preclude giving a moment to personal matters of the heart.

Choice news-bits of the Salesmen's golf tournament at North Hills: the old Alkali Quartet superbly directed by "Cy" Galliher, and depending upon "Ed" Brundage for the low notes, breaking out into "Oh How I Miss That Old Gang of Mine", "Larry" Swensen and "Jack" Lephart, new entertainment committee, asking everyone if they had had a good time after putting over the best party in years—"Jack" Falkingham and friends crashing the gate of a wives and sweethearts bridge party at Douglaston Manor.

A widely known chemical engineer who wears on his watch chain the fobs of his college fraternity, a chemical honor fraternity, and the red shield of the Chemical Engineers, was accosted at Absecon by a rude and ruthless sales manager—"Ha! a medal for every salary cut!"

"When the man bites the dog" is Horace Greeley's definition of news which we have revised to "When Al Alvarez, Grasselli, loses a Salesmen's Golf Tournament."